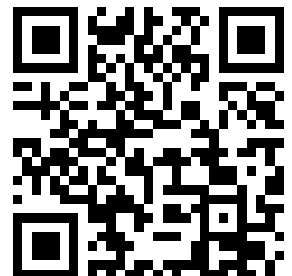

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DEPARTMENT OF THE ARMY TECHNICAL MANUAL

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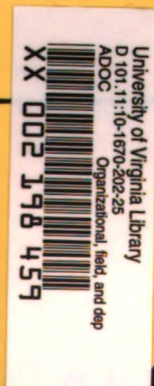
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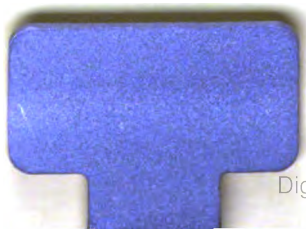
ORGANIZATIONAL, FIELD,
AND DEPOT MAINTENANCE

PARACHUTE, CARGO,
28-FOOT DIAMETER
NYLON CANOPY,
TYPE T-7A (CONVERTED)

This reprint includes all changes in
effect at the time of publication -
Changes 1 and 2.



HEADQUARTERS, DEPARTMENT OF THE ARMY
JANUARY 1962



TECHNICAL MANUAL

Organizational, Field, and Depot Maintenance Manual

PARACHUTE, CARGO, 28-FOOT-DIAMETER
NYLON CANOPY, TYPE T-7 (CONVERTED)

TM 10-1670-202-25 }
CHANGES No. 1 }

HEADQUARTERS,
DEPARTMENT OF THE ARMY
WASHINGTON 25, D.C., 6 December 1962

TM 10-1670-202-25, January 1962, is changed as follows:

Title is changed as shown above.

The term "T-7A" used in the text of this manual is changed to read "T-7."

4. Recommended Changes

Users of this *** and complete evaluation. Comments should be submitted on DA Form 2028 (Recommended Changes to DA Technical Manual Parts Lists or Supply Manual 7, 8, or 9) to the Commandant, U.S. Army Quartermaster School, Fort Lee, Va.

6. Inspection

(Superseded)

a. General. The T-7 cargo parachute must be given a detailed inspection prior to packing, and before and after repairs are made. In addition, visible components of the packed parachute must

be given a routine inspection before the parachute is issued for use. If during inspection by the packer a component is found to be unserviceable, the the parachute must be rigger-rolled and processed for repair. The inspection at the repair activity is performed on a shadowbox inspection table to determine the most minute detail requiring repair. The necessity for care and diligence in inspecting the parachute assembly cannot be over-emphasized. Failure to detect areas of damage may cause the parachute to malfunction.

b. Maintenance Indicator Checklist. The following maintenance indicator checklist tells when to inspect each item, gives a sequence to follow, and lists possible areas of damage that would make the parachute assembly unserviceable. Any damage observed will be noted on the proper tag (par. 7) as specified in AR 750-1670-2.

Maintenance Indicator Checklist (Added)

Key—Intervals of Inspection

W—Prior to packing, but at least every 365 days (repack cycle).

X—Prior to issue for use.

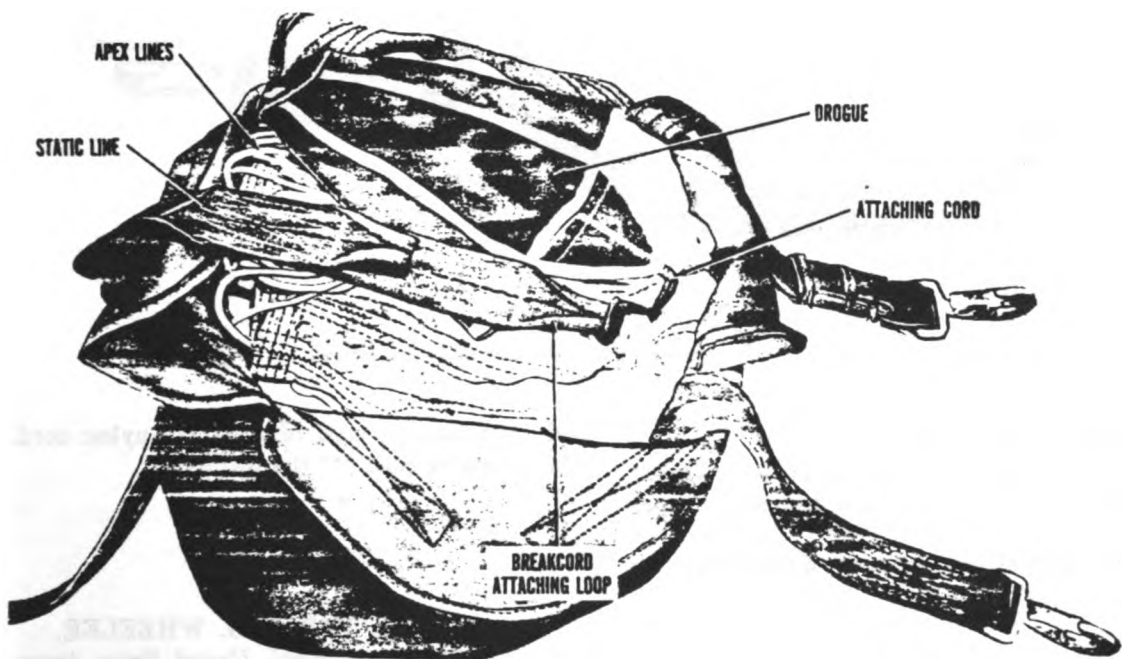
Y—Prior to repairs, and after all repairs are completed.

Z—After use (shakeout).

Item No.	Assembly or component	Intervals of inspection				Inspect for—
		W	X	Y	Z	
1	Log Record book	X	X	X	X	Secure attachment, accomplishment of required modifications.
	CANOPY ASSEMBLY					
2	Informational data block	X		X		Legibility.
3	Bridle loop	X		X		Loose or broken stitching, burns, frays, tears.
4	Apex lines	X		X		Loose or broken stitching, burns, broken core cords, breaks, frays.

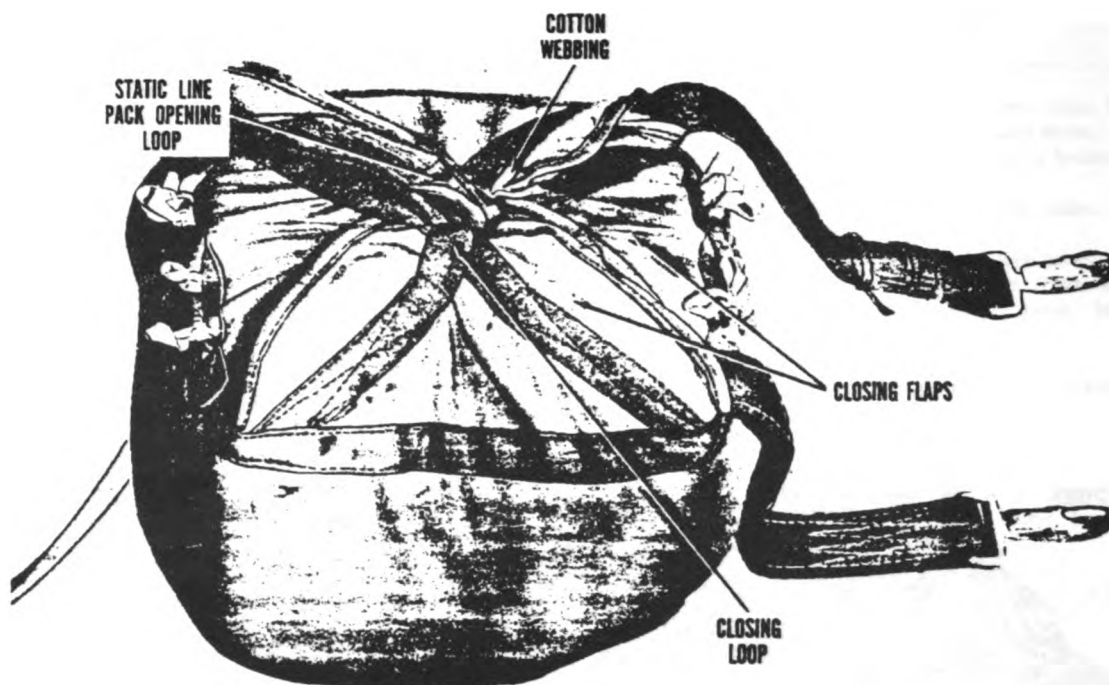
Maintenance Indicator Checklist (Added)—Continued

Item No.	Assembly or component	Intervals of inspection				Inspect for—
		W	X	Y	Z	
5	Upper lateral band	X		X		Loose or broken stitching, burns, tears, frays.
6	Canopy				X	Dampness, debris, large rips and holes.
7	Gore sections	X		X		Spots or foreign material, loose or broken stitching, holes, tears, snags.
8	Radial seams	X		X		Loose or broken stitching, holes, tears.
9	Radial lines	X		X		Breaks, broken core cords.
10	Lower lateral band	X		X		Loose or broken stitching, burns, tears, frays.
11	V-tabs	X		X		Loose or broken stitching, tears, frays, holes.
12	Suspension lines	X		X		Loose or broken stitching, burns, broken core cords, breaks.
					X	Broken lines.
13	Connector links	X		X		Rough spots, burs, cracks, stripped threads, foreign material.
	RISER ASSEMBLY					
14	Risers	X	X	X		Loose or broken stitching, burns, frays, tears.
15	Spreader bar	X		X		Loose or broken stitching, burns, breaks, broken core cords.
16	Snap	X	X	X		Free action, burs, cracks, corrosion.
17	Log record pocket	X	X	X	X	Loose or broken stitching.
	PACK ASSEMBLY					
18	Bag Body				X	Large holes or tears.
19	Bottom and side panels	X	X	X		Loose or broken stitching, holes, tears, frays.
20	Closing flaps	X	X	X		Loose or broken stitching, holes, tears, frays.
21	Closing loop straps and loops	X	X	X		Loose or broken stitching, holes, tears, frays.
22	Tiedown loops	X	X	X		Loose or broken stitching, holes, tears, frays.
23	Tiedown tapes	X	X	X		Holes, tears, frays.
	STATIC LINE ASSEMBLY					
24	Webbing	X	X	X		Loose or broken stitching, burns, frays, tears.
					X	Breaks.
25	Pack opening loop	X	X	X		Loose or broken stitching, burns, frays, tears.
26	Clevis assembly	X	X	X		Rough spots, cracks, breaks, burs, broken cotter pin, broken cord.
	DROGUE					
27	Vanes	X		X		Loose or broken stitching, holes, tears.
28	Attaching cord	X		X		Loose or broken stitching, broken core cords, breaks.



18-110-20

Figure 20. (Superseded) Drogue attached during packing procedures.



18-11821

Figure 21. (Superseded) Pack with flaps closed and secured.

24. Repairing Drogue

The drogue (fig. 40) consists of four vanes, constructed of nylon duck cloth and nylon tape,

and an attaching cord of type III nylon cord. The attaching cord *** the static line.

* * * * *

By Order of the Secretary of the Army:

Official:

J. C. LAMBERT,
Major General, United States Army,
The Adjutant General.

EARLE G. WHEELER,
General, United States Army,
Chief of Staff.

Distribution:

Active Army:

DCSLOG (1)
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 USA QM Catalog and Standardization Ofc (4)
 USA QM Tech Committee (9)
 Units org under fol TOE:
 10-17 (3)
 10-337 (3)
 10-347 (3)
 10-348 (3)
 10-403 (3)
 10-407 (3)
 10-417 (3)
 10-500 EA-EG (3)
 10-521 (3)
 29-52 (3)
 33-103 (3)

NG: None.

USAR: Same as active Army except allowance is one copy to each unit.

For explanation of abbreviations used, see AR 320-50.

Organizational, Field, and Depot Maintenance

PARACHUTE, CARGO, 28-FOOT-DIAMETER NYLON CANOPY, TYPE T-7 (CONVERTED)

CHANGE }
No. 2 }HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D. C., 13 February 1964

TM 10-1670-202-255, 5 January 1962, is changed as follows:

4. Recommended Changes

Users of this * * * and complete evaluation. Comments should be submitted on DA Form 2028 (Recommended Changes to DA Technical Manual Parts Lists or Supply Manual 7, 8, or 9) to: Commanding General, U.S. Army Aviation and Surface Materiel Command ATTN: SMOSM-NS P. O. Box 209 (Main Office) St. Louis, Mo. 63166.

6. Inspection

* * * * *

c. Pack-In-Process Inspection (Added). During the packing of the parachute assembly, here are seven points at which a supervising rigger must inspect for proper procedure. These inspection points are:

- (1) After the parachute is in proper layout.
- (2) After the gores are folded and the flatfold is completed.
- (3) After the skirt hesitator is tied.
- (4) After the suspension lines are stowed.
- (5) After the canopy is stowed and the breakcord is tied.
- (6) After the pack is closed.
- (7) After the static line is stowed.

16. Attaching the Static Line
(Superseded)

a. Attaching the Non-Breakaway Static Line. When the non-breakaway static line is used, it is attached to bridle loop by means of a breakcord, formed from a 54-inch length of 1/4-inch

wide, type I cotton webbing. Attach the static line as follows:

- (1) Position the breakcord attaching loop of the static line adjacent to the bridle loop.
- (2) Form a breakcord by triplefolding a 54-inch length of 1/4-inch wide, type I cotton webbing into an 18-inch length.
- (3) Pass one end of the breakcord through the bridle loop, with the ends of the breakcord of equal length. Stretch the webbing taut. Pass each end of the folded webbing through the breakcord attaching loop (A, fig. 19) of the static line, from opposite directions, passing the ends through the loop. Pull the ends of the webbing through the attaching loop (A, fig. 19) until an approximately 3-inch loop is formed by the webbing. Tie the webbing ends together over the attaching loop (B, fig. 19) with a surgeon's knot and a locking knot.
- (4) Cut off all excess webbing, leaving the ends approximately 2 inches long.

b. Attaching the Breakaway Static Line. When the breakaway static line is used, the T-7 cargo parachute will be prepared as follows:

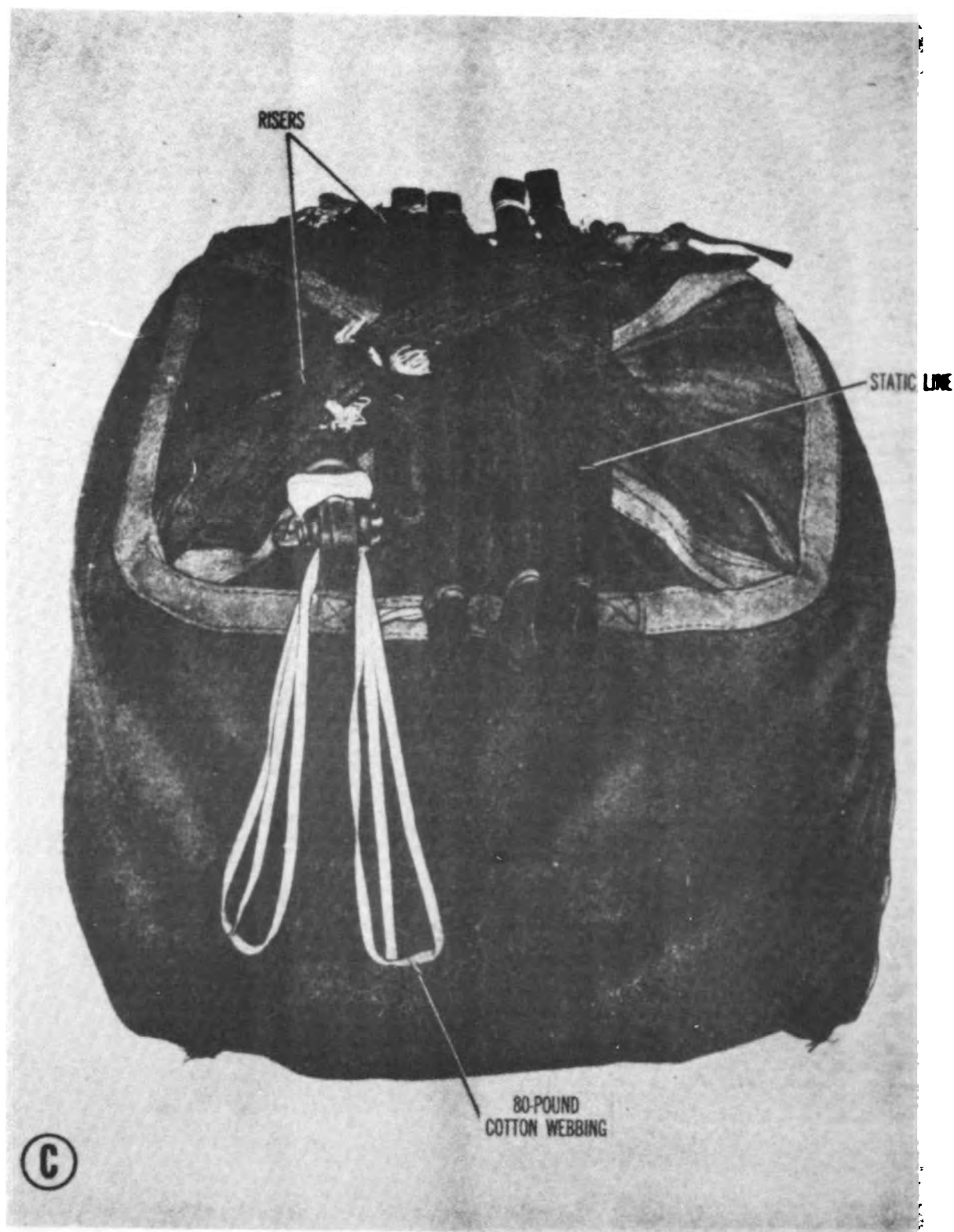
- (1) Tie the bridle loop (A, fig. 19.1) to the static line breakcord attaching loop with two turns of single type III nylon cord. Form a 10-inch loop and secure with a surgeon's knot and a locking knot, and place an overhand knot at each end.



A—Bridle loop attached to static line
Figure 19.1 (Added) Preparing T-7 cargo parachute for breakaway.



B—Pack closing loops tied
Figure 19.1—Continued.



C—80-pound cotton webbing attached to static line
Figure 19.1—Continued.

AGO 1199A

- (2) Fold the bridle lines and the bridle loop, together with the type III nylon cord tie, inside the bag. Fold the pack closing flaps over the stowed canopy.
- (3) Pass one end of a length of 80-pound cotton webbing (B) through the first pack closing loop, through the pack opening loop of the static line, and through the other three pack closing loops. Draw the webbing taut, and tie with a surgeon's knot and a locking knot. Cut the ends approximately 2 inches long.
- (4) If the T-7 cargo parachutes are to be used with external loads or with an interior load that does not utilize an anchor line cable (U-6A), fold the clevis back against the static line (C), and tape securely. Thread one turn of tripled 80-pound cotton webbing through the loop in the end of the static line, leaving the ends free. The webbing will be secured to appropriate points on the airplane.
- (5) If the load is to be dropped from the aircraft utilizing an anchor line cable, remove the clevis from the static line, replacing the pin in the clevis. Thread one turn of tripled 80-pound cotton webbing through the loop in the end of the static line. Tie the webbing to the clevis pin with a surgeon's knot and a locking knot, leaving a loop approximately 4 inches long.

19. General

* * * * *

c. Stitching. Make all stitching for repairs on the canopy with thread that is contrasting in color to the material being sewed. Thread of noncontrasting color may be used for all other stitching. Make all stitches * * * at each end.

20. Repairing Canopy

* * * * *

c. Patching Gore Fabric.

* * * * *

- (7) Remove pins holding canopy to table, and sew patch to gore according to de-

tails for appropriate patch (figs. 25-27).

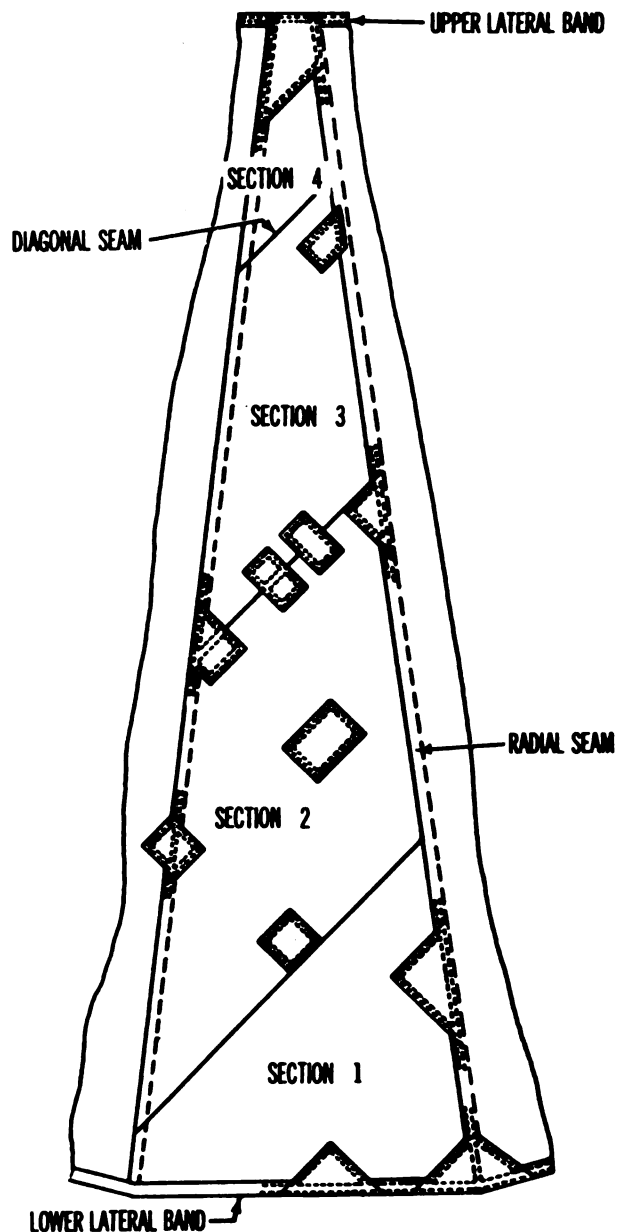


Figure 27. (Superseded) Inside view of canopy gore, showing types of patches.

Figures 28 through 33 are rescinded

*d. Patching Radial Seam, Regardless of length holes, tears, or rips in either one or both sides of a radial seam may be patched, provided the damaged seam is strong enough to support the patch. If parts of * * * (fig. 34) as follows:*

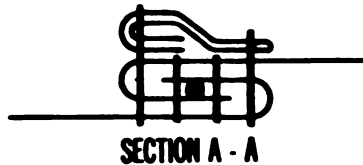
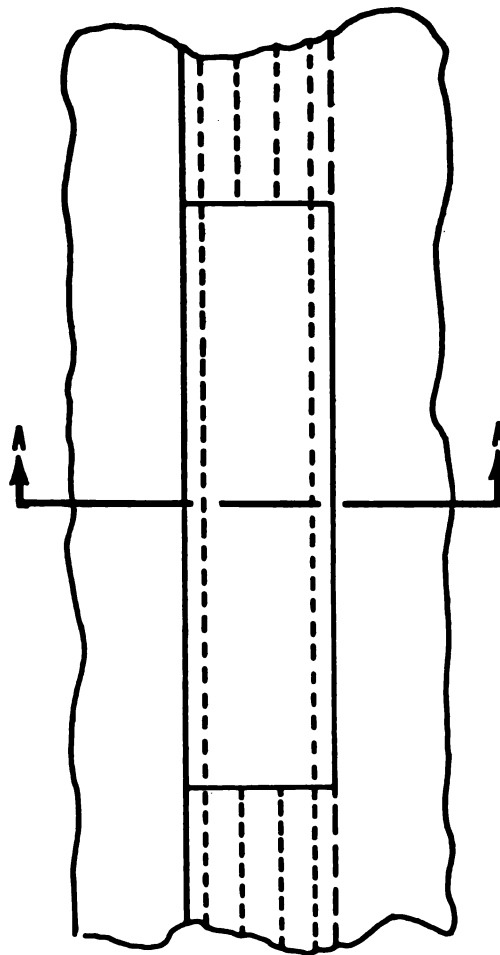


Figure 34. (Superseded) Radial seam patch.

g. Replacing Skirt Hesitator (Added).

- (1) Cut a 14¼-inch length of 1-inch-wide type IV nylon tape, and dip the ends.

- (2) Fold and sew webbing according to the details in figure 36.1. Use Singer Model 31-15 sewing machine or equivalent with ticket No. F nylon thread, and sew 7 to 11 stitches per inch.

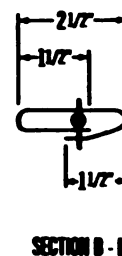
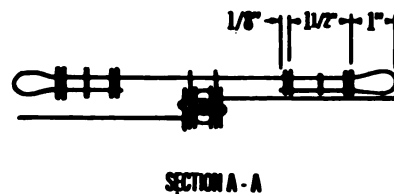
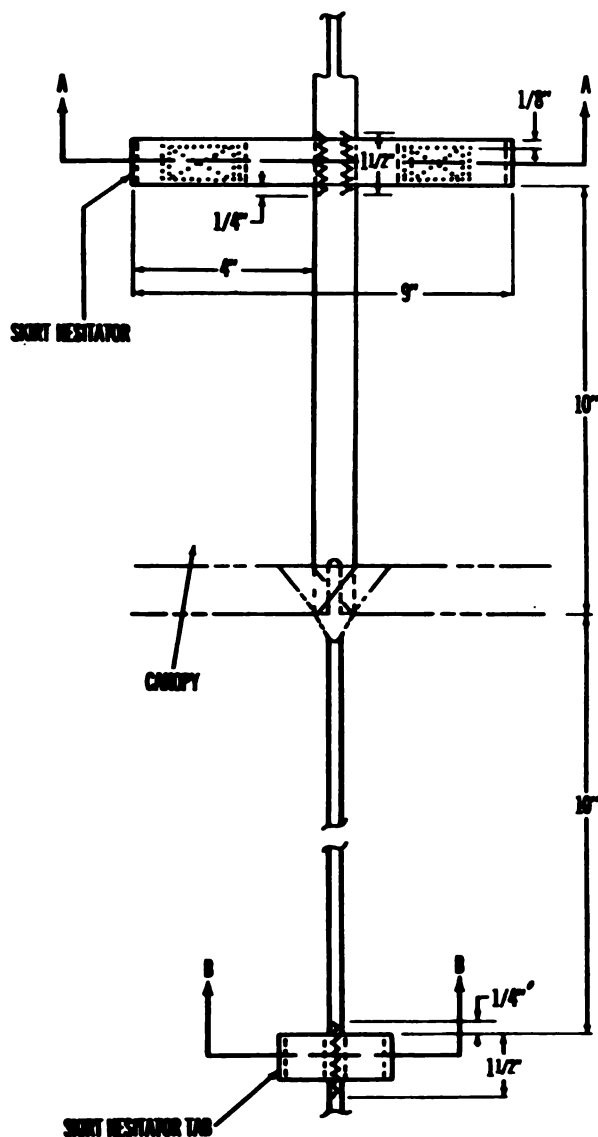


Figure 36.1 (Added) Skirt hesitator replacement details.

(3) Place the canopy skirt on the repair table and smooth the area around the damaged loop. Cut the stitching, and remove the damaged loop from the radial seam.

(4) Sew the replacement loop to the radial seam 14, following the details in figure 36.1. Use Singer Model 31-15 sewing machine or equivalent with ticket No. E nylon thread, and sew 7 to 11 stitches per inch.

k. Replacing Skirt Hesitator Tab (Added).

(1) Cut a 5 3/4-inch length of 1-inch-wide type IV nylon tape, and dip the ends.

(2) Fold and sew the tape according to the details in figure 36.1.

20.1. Replacing Canopy (Added)

Replace damaged T-7 cargo parachute canopy, that exceeds the repair limitations in appendix II, with a serviceable canopy as follows:

a. Unscrew connector links and remove old suspension lines.

b. Attach new suspension lines following details in figure 7.

21. Repairing Riser Assembly

e. Rewrapping Riser Spreader (Added). Rewrap riser spreader as follows:

- (1) Unwrap damaged tape.
- (2) Using a length of type I adhesive tape, rewrap riser spreader.

21.1 Replacing Riser Assembly (Added)

Replace damaged T-7 cargo parachute riser assembly, that exceeds the repair limitations in appendix II, with a serviceable riser assembly as follows:

- a. Unscrew connector links and remove riser spreader.
- b. Remove old riser assembly.
- c. Attach new riser assembly, replace riser spreader, and attach connector links.

22.1. Replacing Pack Assembly (Added)

Replace damaged T-7 cargo parachute pack assembly, that exceeds the repair limitations in appendix II, with a serviceable pack assembly.

23. Replacing Static Line Assembly

a. Repair.

- (3) *Replacing cotter pin or safety pin (Added).* Replace a broken or missing cotter pin or safety pin with a 5-inch length of steel wire, specification QQ-W-423. Form cotter pin or safety pin, following details in figure 39.1. Replace tie cord with a 16-inch length of 75-pound braided linen cord, 80-pound cotton webbing, or type III nylon cord following details in figure 39.

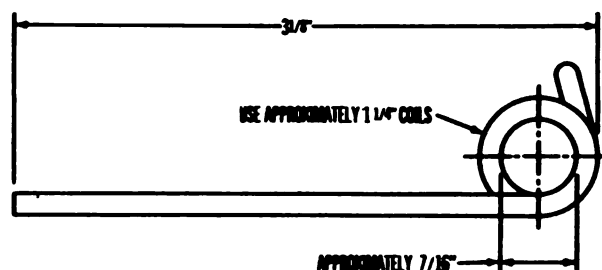


Figure 39.1 (Added) Safety pin construction details.

APPENDIX I

REFERENCES

1. Army Regulations

- | | |
|------------|--|
| 750-5 | Organization, Policies, and Responsibilities for Maintenance Operation |
| 750-1670-2 | Maintenance of Quartermaster Air Delivery Equipment |

2. DA Pamphlets

- | | |
|-------|--|
| 310-4 | Index of Technical Manuals, Technical Bulletins, Supply Manuals (types 4, 6, 7, 8, and 9), Supply Bulletins, Lubrication Orders, and Modification Work Orders. |
|-------|--|

3. Technical Manuals

- | | |
|-----------------|---|
| 10-263 | Clothing and Textile Repair Sewing Machines. |
| 10-591 | Sewing Machines for the Repair of Parachutes and Allied Equipment |
| 10-1670-202-25P | Organizational, Field and Depot Maintenance Repair Parts and Special Tool Lists: Parachute, Cargo, 28-Foot Diameter Nylon Canopy, Type T-7 (Concerted). |
| 38-750 | The Army Equipment Record Procedures |
| 743-200 | Storage and Materials Handling |

APPENDIX II

MAINTENANCE ALLOCATION CHART

(Superseded)

1. Purpose

The maintenance allocation chart is provided to designate all maintenance functions that are authorized for the T-7 cargo parachute and to indicate the lowest echelon that is authorized to perform each function. The allocation of maintenance functions is made on the basis of time, tools, and skills normally available to the echelons as outlined in AR 750-5.

2. Allocation Chart

The maintenance allocation chart contains five columns. An explanation of information furnished in these columns is given below:

a. Assembly or Component. The parachute assembly is listed, together with a breakdown of its major components and the various items of each major component for which maintenance is authorized.

b. Maintenance Function. The specific repair or service that is authorized for each listed item is entered in this column. Each maintenance function indicated for the entire parachute assembly is applicable to all major components, and each function indicated for a major component is applicable to all items of the component, except where the term "replace" is used. The term "replace" applies only to the assembly, component, or item beside which it appears.

c. Echelons. The five echelons of maintenance (AR 750-5) are indicated by the column headings 1 through 5. The symbol "X" in a column indicates the lowest echelon authorized to perform each maintenance function.

d. Tools Required. (Not applicable).

Maintenance Allocation Chart

Group No.	Component and related operations	Ech. of maint.					Tools req'd	Remarks
		1	2	3	4	5		
	TYPE T-7 (CONVERTED) CARGO PARACHUTE ASSEMBLY							
	Clean -----		X					
	Inspect -----		X					
	Pack for drop -----		X					
	CANOPY ASSEMBLY							
	Darn -----		X					
	Patch -----		X					
	Replace -----		X					
	Restitch -----		X					
	Bridle Loop							
	Replace -----		X					
	Suspension Line							
	Splice -----		X					
	Skirt Hesitator							
	Replace -----		X					
	Skirt Hesitator Tab							
	Replace -----		X					
	RISER ASSEMBLY							
	Replace -----		X					
	Restitch and/or handtack -----		X					
	Log Record Pocket							
	Replace -----		X					
	Log Record Book (DA FORM 10-42)							
	Replace -----		X					

Maintenance Allocation Chart—Continued

Group No.	Component and related operations	Ech. of maint.					Tools req'd	Remarks
		1	2	3	4	5		
	PACK ASSEMBLY							
	Darn -----		X					
	Replace -----		X					
	Restitch -----		X					
	Tiedown Tape							
	Replace -----		X					
	STATIC LINE ASSEMBLY							
	Replace -----		X					
	Restitch -----		X					
	Clevis Assembly							
	Replace -----		X					
	Cotter Pin							
	Replace -----		X					
	DROGUE							
	Darn -----		X					
	Restitch -----		X					
	Attaching Cord							
	Replace -----		X					

By Order of the Secretary of the Army:

EARLE G. WHEELER,
General, United States Army,
Chief of Staff.

Official:

J. C. LAMBERT,
Major General, United States Army,
The Adjutant General.

Distribution:

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CSigO (1)
USAAESWBD (2)
USAIB (3)
USAARTYBD (3)
USAARMBD (3)
USARADB (3)
USAAVNBD (3)
USAATBD (3)
USAMC (12)
USASMCOM (1)
USCONARC (2)
ARADCOM (2)
ARADCOM Rgn (2)
OS Maj Comd (3)
LOGCOMD (1)
USAMOCOM (2)
USAWECOM (5)
USAMICOM (5)
USAMUCOM (5)
USAECOM (5)
USATECOM (5)
MDW (1)
Armies (5)
Ft Lee (2)
Ft Rucker (4)
Army Dep (4)
USMA (1)
Sve Colleges (2)
USAQMS (100)
USAAVNS (10)
USAQMTC (4)
USA Mbl Spt Cen (36)

NG: None.

USAR: None.

For explanation of abbreviations used, see AR 320-50.

USA Trp Mat Comd (5)
USA Natick Lab (4)
USA Spt Cen, Richmond (4)
USA Spt Cen, Phila (4)
Aerial Spt Cen (4)
QM Fld Maint Shops:
Ft Benning (4)
Ft Bragg (4)
Ft Bliss (4)
Ft Campbell (4)
Ft Hood (4)
Presido of San Francisco (4)
Yuma PG (2)
USA Corps (2)
Units org under fol TOE:
10-17 (3)
10-337 (3)
10-407 (3)
10-417 (3)
10-445 (2)
10-446 (2)
10-446 (2)
10-500 (EA-EE) (2)
10-521 (3)
29-51 (2)
29-52 (2)
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29-56 (2)
29-57 (2)
29-307 (2)
33-106 (3)
33-106 (3)
33-107 (3)
57 (10)
57-5 (10)
57-6 (10)

TECHNICAL MANUAL

NO. 10-1670-202-25

HEADQUARTERS,
DEPARTMENT OF THE ARMY
Washington 25, D.C., 5 January 1962

**ORGANIZATIONAL, FIELD, AND DEPOT MAINTENANCE
PARACHUTE, CARGO, 28-FOOT
DIAMETER NYLON CANOPY, TYPE T-7A (CONVERTED)**

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SECTION I

INTRODUCTION

1. Scope

a. This manual contains maintenance instructions for organizational (2d echelon), field (3d and 4th echelon), and depot (5th echelon) maintenance of the T-7A cargo parachute (converted). It includes information on the packing of the parachute, and on the composition, inspection, repair, and replacement of the components and assemblies of the parachute.

b. The Repair Parts and Special Tools List is published in TM 10-1670-202-25P.

2. Appendixes

a. Appendix I lists applicable references, such as Army Regulations, Technical Manuals, and Supply Manuals.

b. Appendix II contains the Maintenance Allocation Chart (MAC), which lists all maintenance operations to be performed by the applicable echelon.

3. Maintenance Allocation

All maintenance responsibilities for the

T-7A cargo parachute (converted) are allocated to the second echelon as reflected in the Maintenance Allocation Chart (app. II). The allocation of maintenance operations is made on the basis of time, tools, and skills normally available to the echelons as outlined in AR 750-5.

4. Recommended Changes

Users of this manual are encouraged to submit recommended changes or comments to improve the manual. Comments should be keyed to the specific page, paragraph, and line of the text in which the change is recommended. Reasons should be provided for each comment to insure understanding and complete evaluation. Comments should be submitted on DA Form 2028 (Recommended Changes to DA Technical Manual Parts Lists or Supply Manual 7, 8 or 9), direct to Commanding General, Quartermaster Training Command, U. S. Army, Fort Lee, Va.

SECTION II

DESCRIPTION AND GENERAL PROCEDURES

5. Description

The T-7A cargo parachute (converted) is a T-7A personnel parachute converted to a 500-pound capacity cargo parachute. The parachute consists of a 28-foot diameter nylon canopy, riser assembly, 15-foot static line, and pack assembly (fig. 1). The canopy has 28

gores and 28 suspension lines, and has a flat circular shape (fig. 2). The suspension lines are numbered counterclockwise from 1 to 28, when viewed from the connector links (fig. 3). The drogue, which is used with the T-7A cargo parachute as required, consists of four vanes and an attaching cord (par. 17).



Figure 1. Components of T-7A cargo parachute (converted), with drogue.

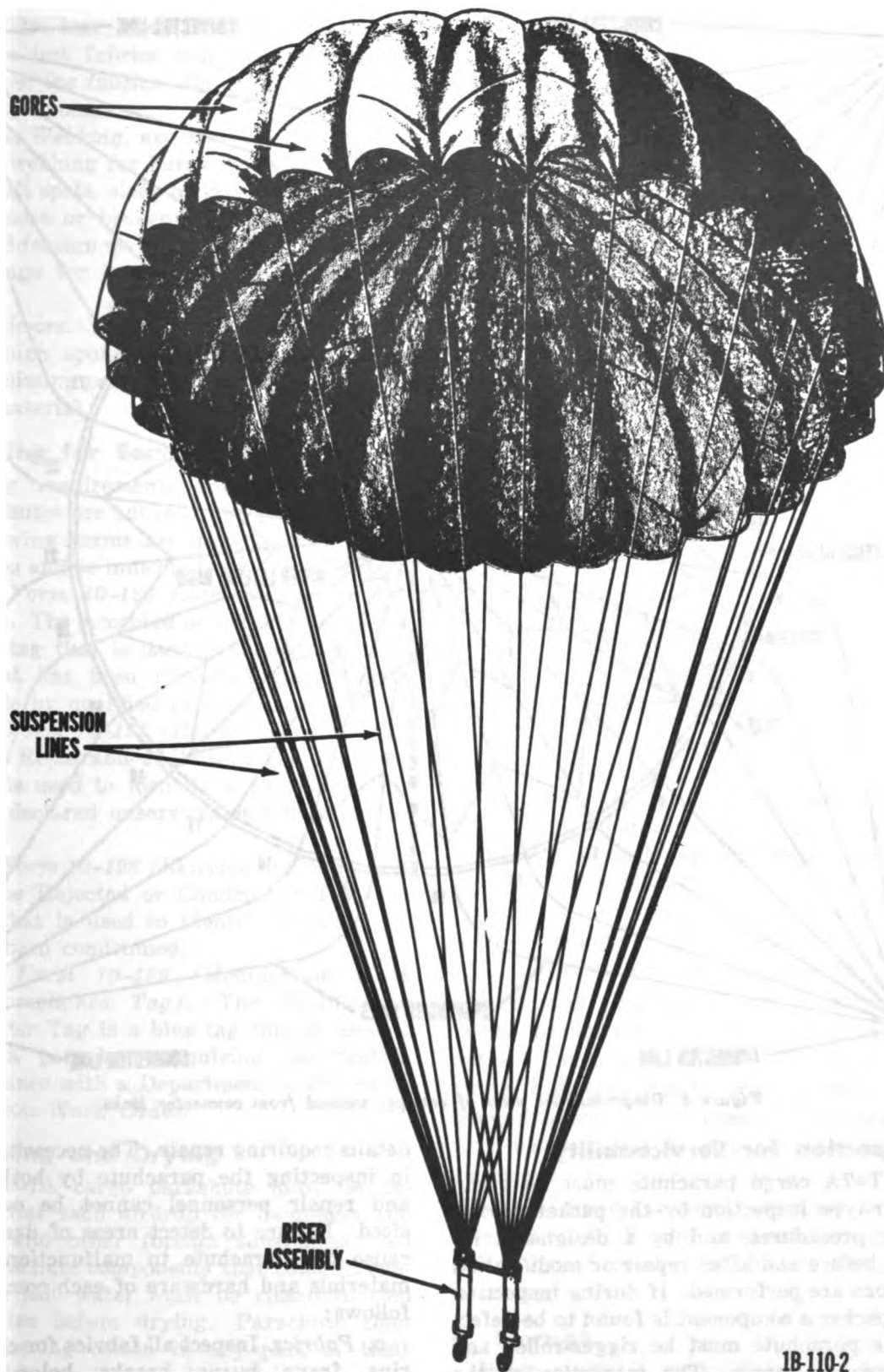


Figure 2. Inflated canopy, with riser assembly.

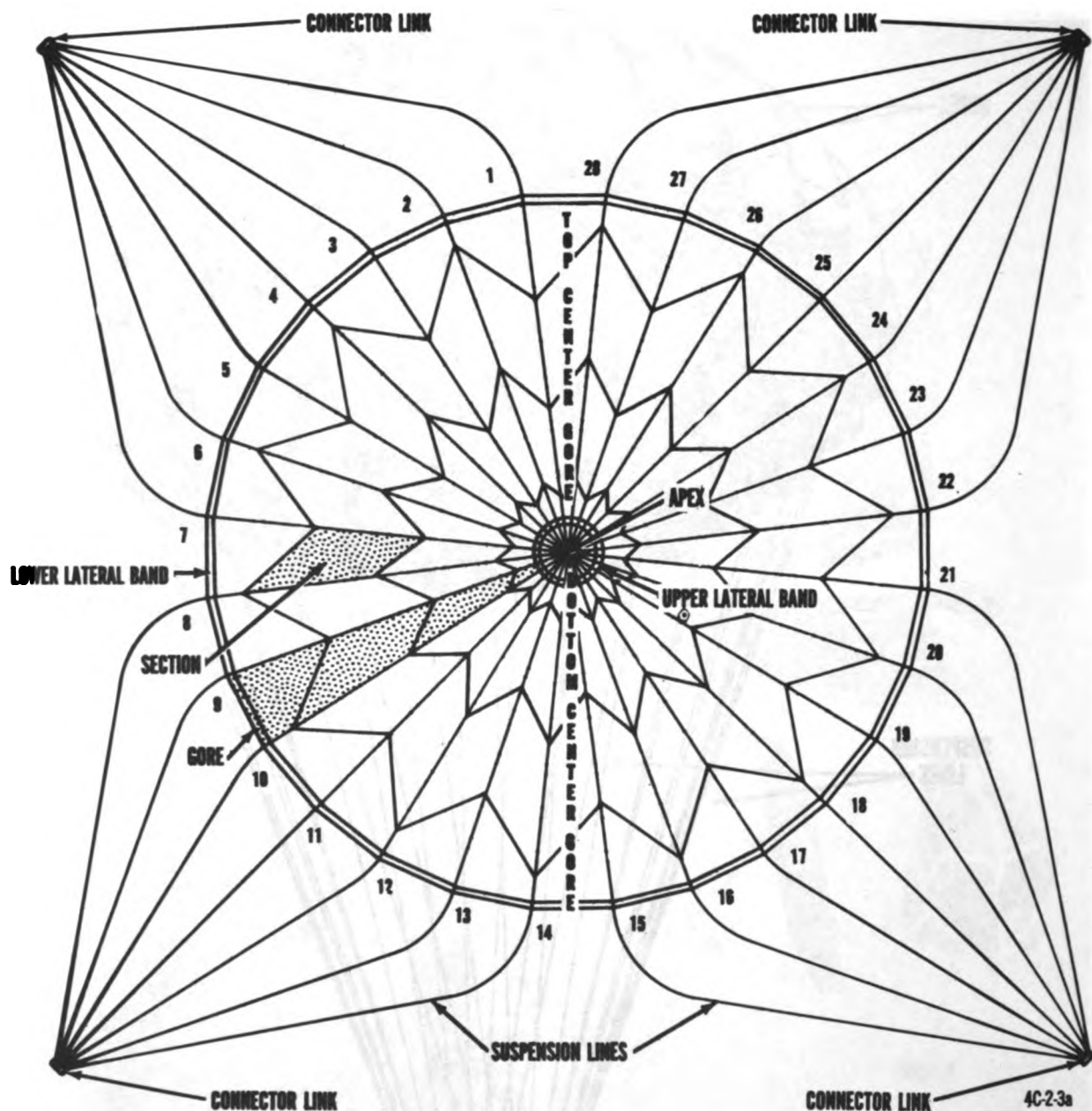


Figure 3. Diagrammatic view of canopy, viewed from connector links.

6. Inspection for Serviceability

The T-7A cargo parachute must be given a rigger-type inspection by the packer during packing procedures, and by a designated inspector before and after repair or modification operations are performed. If during inspection by the packer a component is found to be defective, the parachute must be rigger-rolled and processed for repair. The inspection at the repair activity is performed on a shadow box inspection table to determine the most minute

details requiring repair. The necessity for care in inspecting the parachute by both packing and repair personnel cannot be overemphasized. Failure to detect areas of damage may cause the parachute to malfunction. Inspect materials and hardware of each component as follows:

a. *Fabrics.* Inspect all fabrics for cuts, tears, rips, frays, burns, breaks, holes, loose or broken stitching or tacking, weak spots, and foreign material. Do not test fabrics by at-

tempting to tear them; pulling vigorously enough to test fabrics will twist the weave and weaken the fabrics. Be careful not to increase any damage.

b. Tape, Webbing, and Cordage. Inspect all tape and webbing for burns, holes, cuts, tears, thin or soft spots, slack or loose weaving, misweaves, loose or broken stitching or tacking, frays, and foreign material. Inspect suspension line cordage for burns and for broken core cords.

c. Hardware. Inspect all hardware for burns, rough spots, stripped threads, bends, loose or missing parts, rust, corrosion, and any foreign material.

7. Tagging for Serviceability

Tagging requirements and responsibilities for parachutes are outlined in AR 750-1670-2. The following forms are used to identify the parachutes and to indicate their serviceability:

a. DA Form 10-196 (Accepted or Serviceable Tag). The Accepted or Serviceable Tag is a yellow tag that is used to identify a parachute that has been inspected and declared serviceable by qualified personnel.

b. DA Form 10-197 (Repairable or Rework Tag). The Repairable or Rework Tag is a green tag that is used to identify a parachute that has been declared unserviceable but is repairable.

c. DA Form 10-198 (Rejected or Condemned Tag). The Rejected or Condemned Tag is a red tag that is used to identify a parachute that has been condemned.

d. DA Form 10-199 (Modification Work Order Compliance Tag). The Modification Work Order Tag is a blue tag that is used to identify a parachute requiring modification in compliance with a Department of the Army Modification Work Order.

8. Cleaning and Drying

Each T-7A cargo parachute must be examined after each airdrop for dampness and for dirt and other foreign substances. All nylon parachute components that come in contact with salt water must be rinsed in cold fresh water before drying. Parachute components having cotton in any part of their construction must be condemned if they come in contact with salt water, regardless of the length of time of exposure.

a. Cleaning. Cleaning of each T-7A cargo parachute will be held to a minimum and considered only when it is necessary to prevent malfunction or deterioration. When cleaning is considered necessary, it must be performed manually by shaking, brushing, or spot-cleaning, and must be limited to the soiled areas only. The method of cleaning must be determined by the nature of the substances to be removed. Since shaking or brushing is less likely to damage the fabric than spot-cleaning, these two methods must be used where applicable. When neither shaking nor brushing is considered suitable, spot-clean as follows:

(1) Spot-cleaning cotton components.

Spot-clean all components having cotton as part or all of their construction by gently brushing or rubbing the soiled area with a soft-bristled brush or clean cloth that has been dampened with dry-cleaning solvent tetrachloroethylene. Rinse the cleaned area by repeating the spot-cleaning process with more of the dry-cleaning solvent.

(2) Spot-cleaning nylon components.

Spot-clean all nylon components with dry-cleaning solvent as in (1) above or by using a solution of warm water and neutral synthetic detergent. To make the solution, dissolve 1 to 4 ounces of hand-dishwashing compound (FSN 7930-281-4731) in 1 gallon of warm water. Rinse the soiled area thoroughly in fresh clear water. Do not wring out the components.

b. Drying. Suspend a wet or damp T-7A cargo parachute in a well-ventilated room away from direct sunlight. Do not dry parachute in direct sunlight or by spreading it on ground except in emergencies. Drying speed may be increased by the use of fans or by suspending the parachute in a heated drying room. When heat is used, it must not be allowed to exceed 200° F. and must not be applied for more than 3 consecutive hours at this temperature.

9. Storage

When available, a heated warehouse should be used for the storage of the parachute. The parachute must be stored in a dry place and

protected from direct sunlight. It should be stored on wood racks or dunnage to provide airspace between the floor and the parachute, thereby preventing dampness to the parachute.

The parachute should never be stored in contact with a concrete floor. Except when required for anticipated use, the parachute must be stored unpacked.

SECTION III

PACKING PROCEDURES

10. General

The necessity for care and accuracy in packing the T-7A cargo parachute (converted) cannot be overemphasized. Carelessness, such as misplacing a packing weight, leaving knots in suspension lines, dropping a suspension line while stowing the lines in retainer bands, or failing to note damage to components (par. 6) may cause the parachute to malfunction. Therefore, each step in the packing procedure must be carefully performed.

11. Laying Out Canopy

The proper layout of a parachute canopy on the packing table ensures that gores and suspension lines are in proper order for packing. Lay out the canopy and riser assembly as follows:

- a. Lay out canopy and riser assembly lengthwise on packing table, with canopy apex near apex hook and risers at opposite end of table.
- b. Check to see that apex lines cross upper lateral band on the outside. If lines are on the inside, the canopy is inverted. Correct an

inversion by grasping bridle loop and pulling it down through canopy and out between any two adjacent suspension lines.

- c. Attach canopy bridle loop to apex hook at end of table (fig. 4).

- d. Locate top center canopy gore (between lines 1 and 28), and position canopy with this gore on top.

- e. Attach riser assembly to tension board (fig. 5), removing any turns from suspension lines. A turn exists when one group of suspension lines is wound around the other group. Remove turns by rotating riser assembly in a direction opposite to the turns until all turns are removed. Apply tension at tension board.

- f. Beginning at skirt of canopy, separate suspension lines into two groups, with lines 1 through 14 in left group and lines 15 through 28 in right group. If the lines will not separate into two distinct groups, the lines are tangled. A tangle exists when suspension lines of one group are tangled with the lines of the other group. Remove a tangle by removing riser assembly from tension board, and beginning

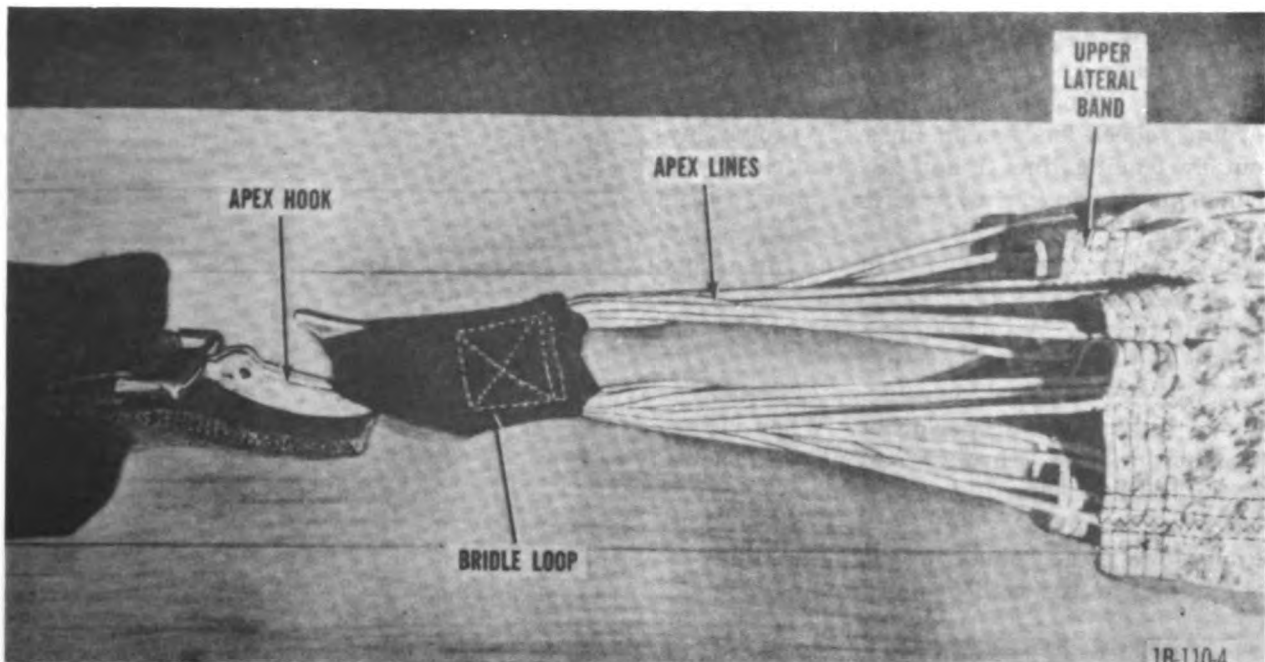


Figure 4. Bridle loop attached to apex hook.

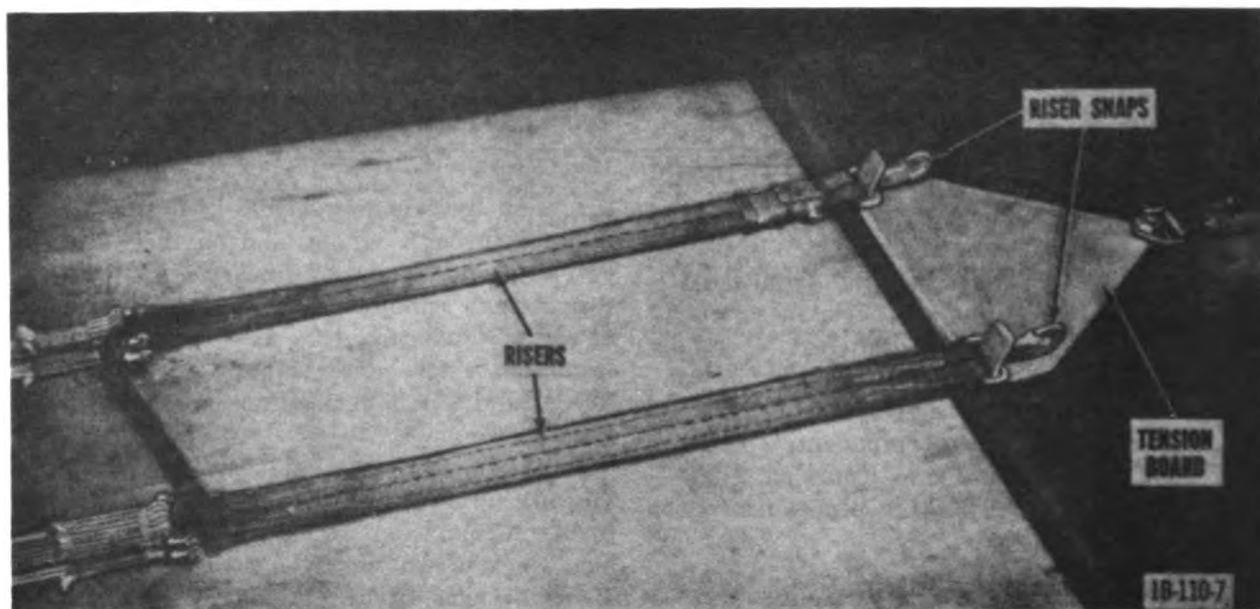


Figure 5. Riser assembly attached to tension board.

at skirt of canopy, separate left and right groups of lines. Continue to separate lines by working along lines toward connector links until tangle reaches a point approximately 12 inches from connector links. With left hand, select top line or lines that form tangle. With right hand, reach under top lines selected, grasp risers, and pull riser assembly through suspension lines. Do not allow riser assembly to turn. Repeat procedure until all tangles are removed. Attach riser assembly to tension board again.

g. With suspension lines separated into two groups, check suspension lines for proper layout by tracing lines 1 and 28 from canopy to connector links (fig. 6). If lines are twisted, disconnect riser assembly from tension board, and pass riser assembly between the two groups of suspension lines in a direction opposite to that of twists. Attach riser assembly to tension board, and apply tension.

h. Check to see that suspension lines and connector links are in proper order. When viewed from risers, lines 1 through 7 should be attached to top left connector link, lines 8 through 14 to bottom left connector link, lines 15 through 21 to bottom right connector link, and lines 22 through 28 to top right connector link (fig. 7).

12. Folding Canopy

The folding of the canopy includes the fold-

ing of the gores and the long-folding of the canopy.

a. Folding Gores. With canopy and suspen-

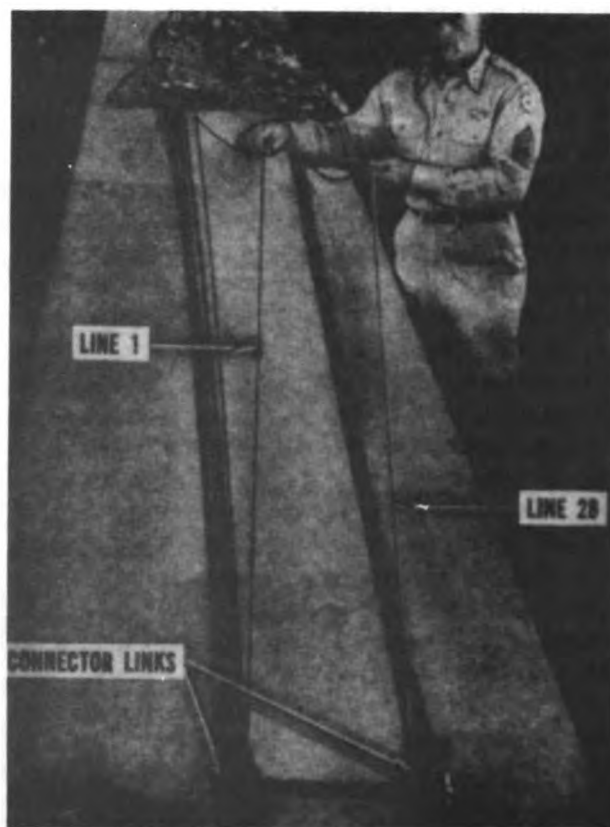


Figure 6. Tracing suspension lines 1 and 28.

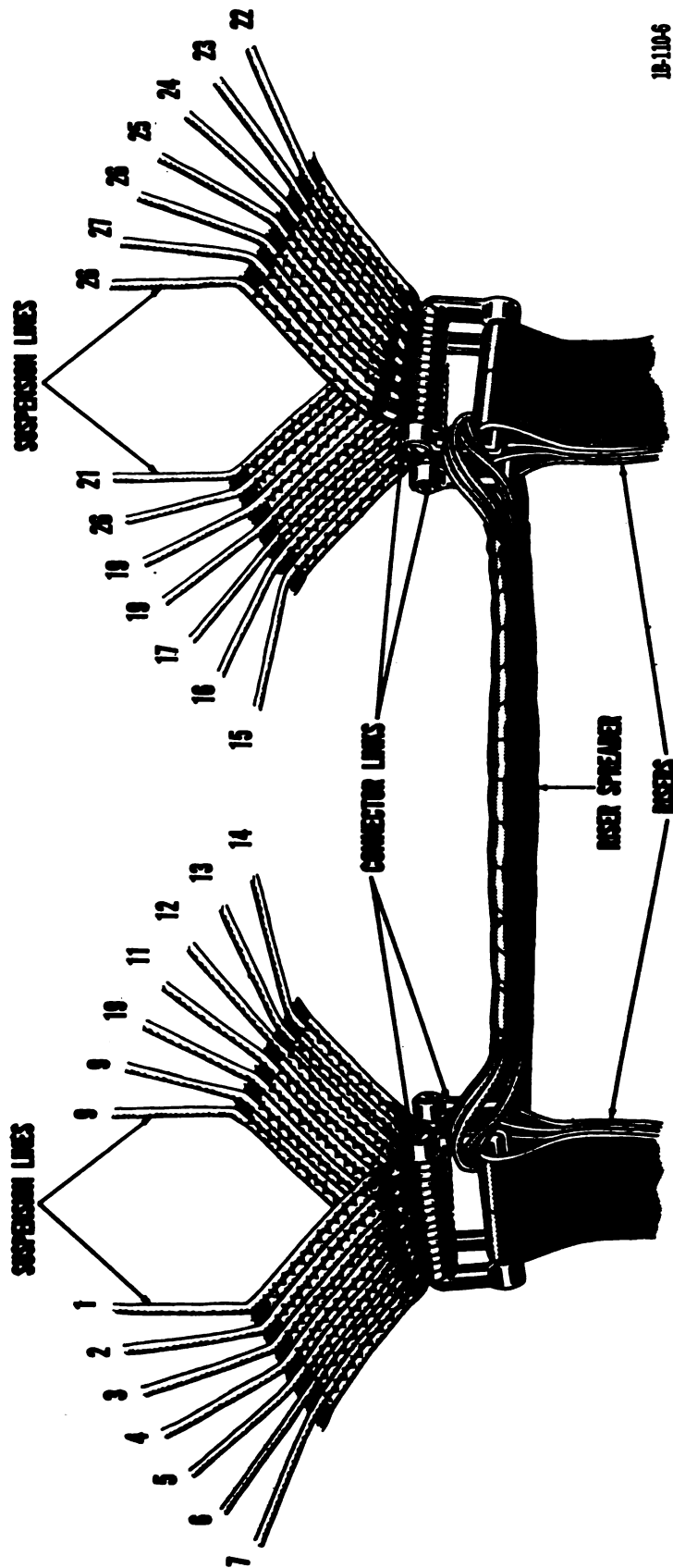


Figure 7. Suspension lines attached to connector links.

sion lines under tension, fold canopy as follows:

- (1) With left hand, lift right group of suspension lines (lines 15 through 28) at canopy skirt. Reach under right group with right hand, and grasp left group of suspension lines (lines 1 through 14). Flip right group over left group (fig. 8). Bottom center gore (between lines 14 and 15) should now be on top.
- (2) Release lines, and pick up line 15 at canopy skirt with thumb and forefinger of right hand. Move line 15 over edge of table, and with thumb and forefinger of left hand, raise line 16 sufficiently to expose gore between lines 15 and 16 (A, fig. 9). Bring left hand down to right hand so that gore between lines 15 and 16 folds neatly to right of lines. (B, fig. 9). Place line 16 directly over line 15, holding lines in place with thumb and forefinger of right hand. Continue

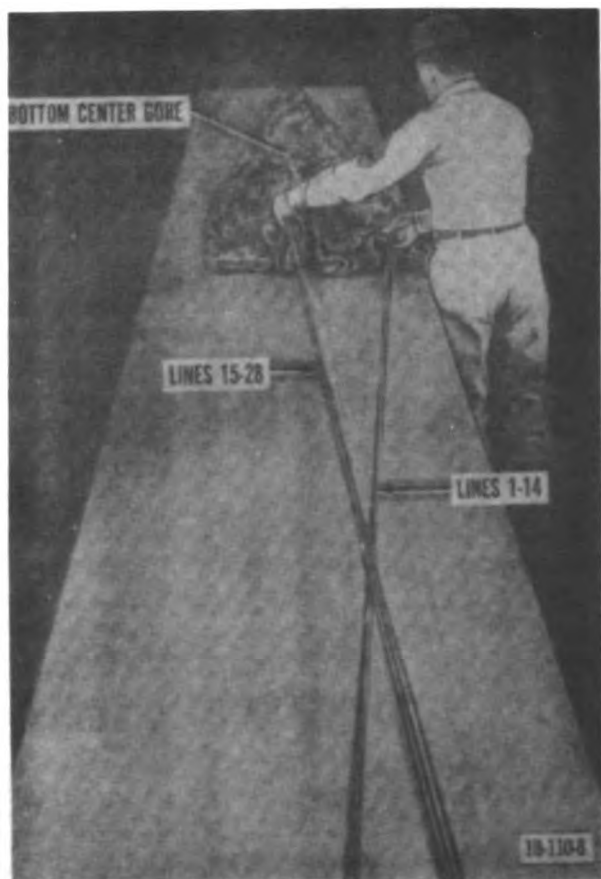


Figure 8. Flipping right group of gores over left group.

this procedure for lines 17 through 28. Line 28 is now on top of group of lines, and line 15 is on bottom.

- (3) Take group of lines in left hand, maintaining lines in proper order. Then scissor the group of lines from top, between middle finger and forefinger of right hand, and rotate group one-half turn clockwise. Line 28 is now on bottom of group, and line 15 on top.
- (4) Pick up line 1 with left hand, and raise sufficiently to expose top center gore (A, fig. 10). Bring left hand down to right hand so that top center gore folds neatly over right group of gores. Place line 1 between thumb and forefinger of right hand (B, fig. 10). Continue this procedure for lines 2 through 13.
- (5) Raise line 14 with left hand, place left elbow under skirt at gore 14, and inflate canopy. Lower line 14 by bringing left hand down to right hand so that gore 13 falls to right and gore 14 to left (C, fig. 10). Place line 14 over line 13 between thumb and forefinger of right hand.
- (6) With all 28 suspension lines now held by right hand, position line separator over left and right groups of suspension lines (D, fig. 10). Make certain that lines 14 and 15 are on bottom of their respective groups.
- (7) Grasp suspension lines with left hand, next to line separator. Grasp all radial seams with right hand approximately 5 feet from lower lateral band. Pull canopy away from side of table until all folded gores drape to side of table (fig. 11).
- (8) Turn line separator counterclockwise, and slide canopy back onto table, with left group of gores over right group (A, fig. 12). Place a packing weight over suspension lines below line separator.
- (9) Adjust tension on canopy and suspension lines at tension board, with sufficient tension to hold lines taut.
- (10) At canopy skirt, count 14 gores down (B, fig. 12), and fold this group over flat on left side of table (C, fig. 12).

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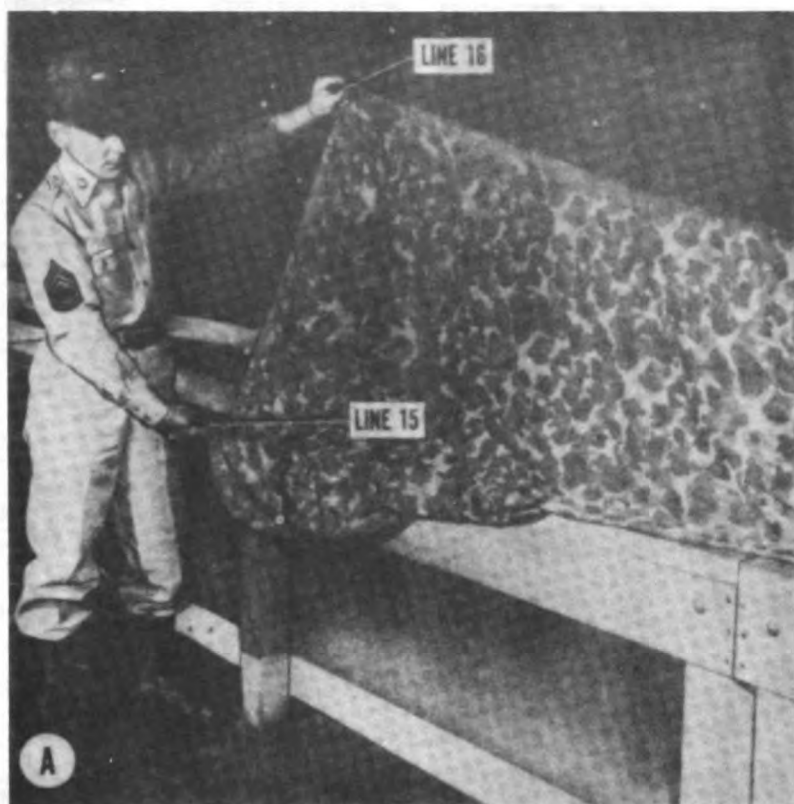


Figure 9. Folding gore between lines 15 and 16 to right of table.

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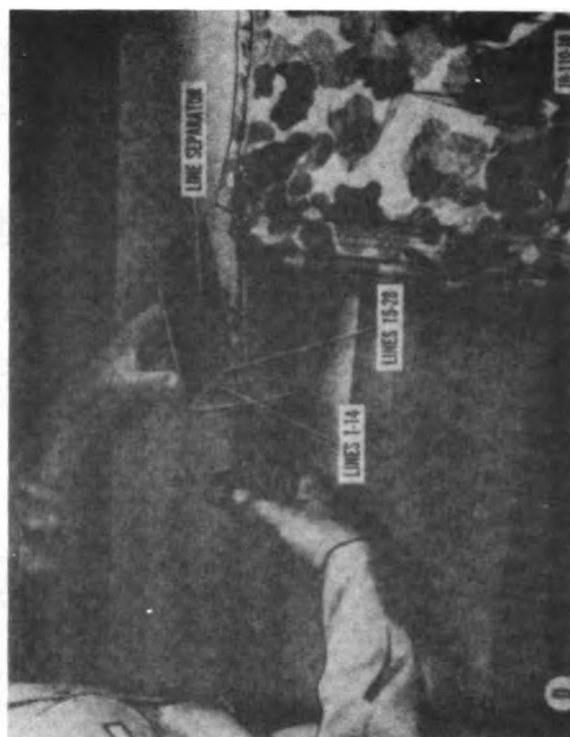
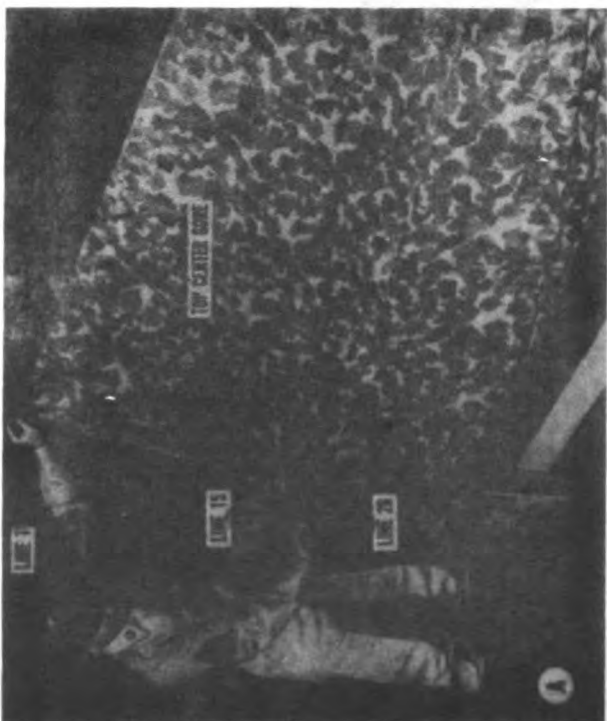


Figure 10. Folding gore between lines 1 and 14 to right of table, and positioning line separator.

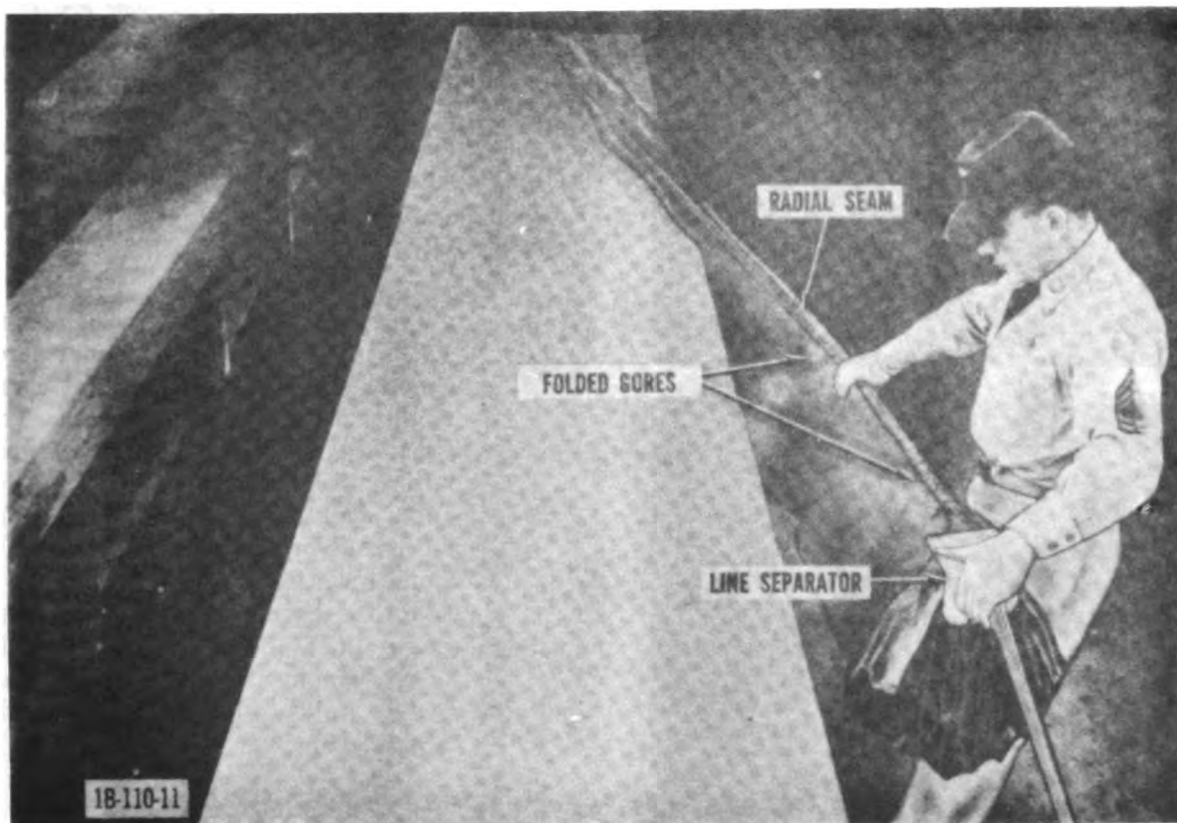


Figure 11. Pulling canopy gores off right side of packing table.



Figure 12. Separating left group of gores from right group.

The top center gore should be the top gore of the left group, and the bottom center gore should be the bottom gore of the right group.

- (11) Dress both groups of gores, beginning with bottom gore of each group. Start at skirt of canopy, and pull edges of folded gores with fingertips, exerting equal pressure on both sides of canopy.
- (12) Moving to skirt of canopy, fold edges of right gores at lower lateral band across radial seam, forming a 45° angle with seam. Then beginning with bottom gore of right group, dress gore edges evenly by pulling each edge with fingers, counting gores to make sure that 14 gores are in right group (A, fig. 13). Dress left group of gores in same manner (B, fig. 13).
- (13) Lift suspension line 28, and make sure that channel between two groups of gores is clear of canopy fabric. If channel is not clear, pull gently along folded edges of gores to remove fabric from channel. If channel cannot be cleared in this manner, refold canopy.

b. Long-Folding Canopy. With canopy and suspension lines under tension, long-fold canopy as follows:

- (1) Long-fold right group of gores by grasping group at skirt of canopy (A, fig. 14) and folding corner across canopy at a 45° angle so that corner slightly overlaps radial seam. Then grasp edge of right group of gores with both hands (B, fig. 14), and fold gores over radial seam. Secure fold with packing weights (A, fig. 15).
- (2) Long-fold left group of gores by adapting procedures used for right group ((1) above). Make sure that folded canopy is same width as pack. Secure folds with packing weights (B, fig. 15).

13. Tying Skirt Hesitator

The tying of the skirt hesitator delays the opening action of the canopy skirt during deployment. Tie the skirt hesitator as follows:

- a.* Release tension on parachute, and remove riser snaps from tension board.



Figure 13. Dressing gores.

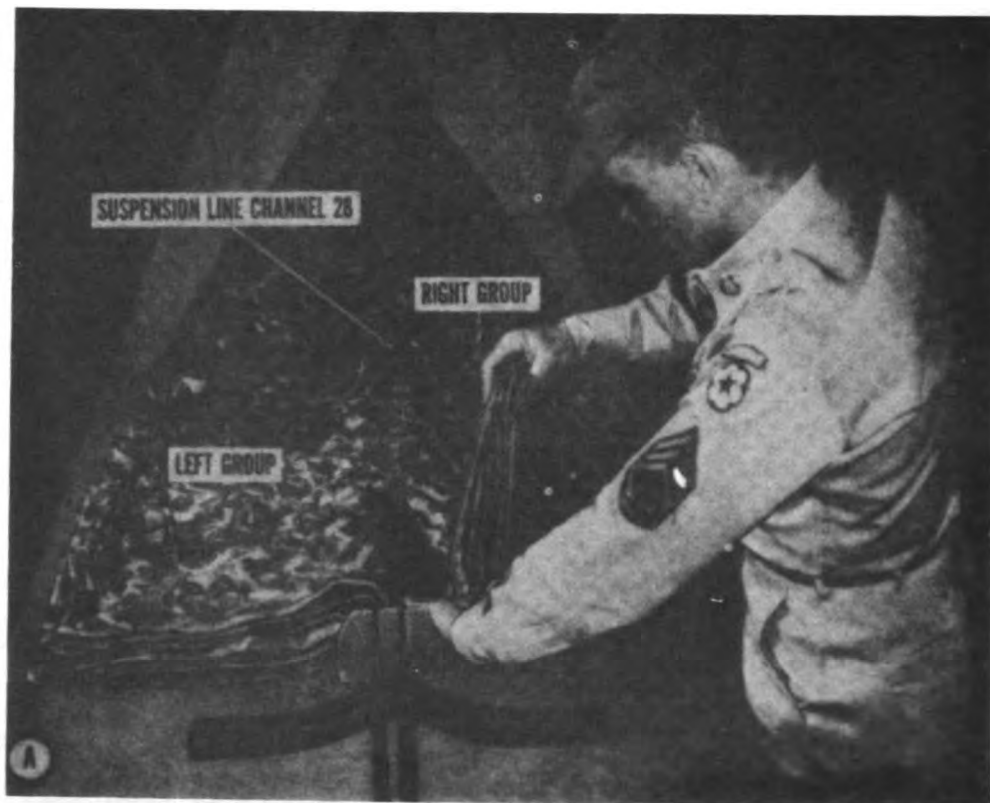


Figure 14. Long-folding right group of gores.

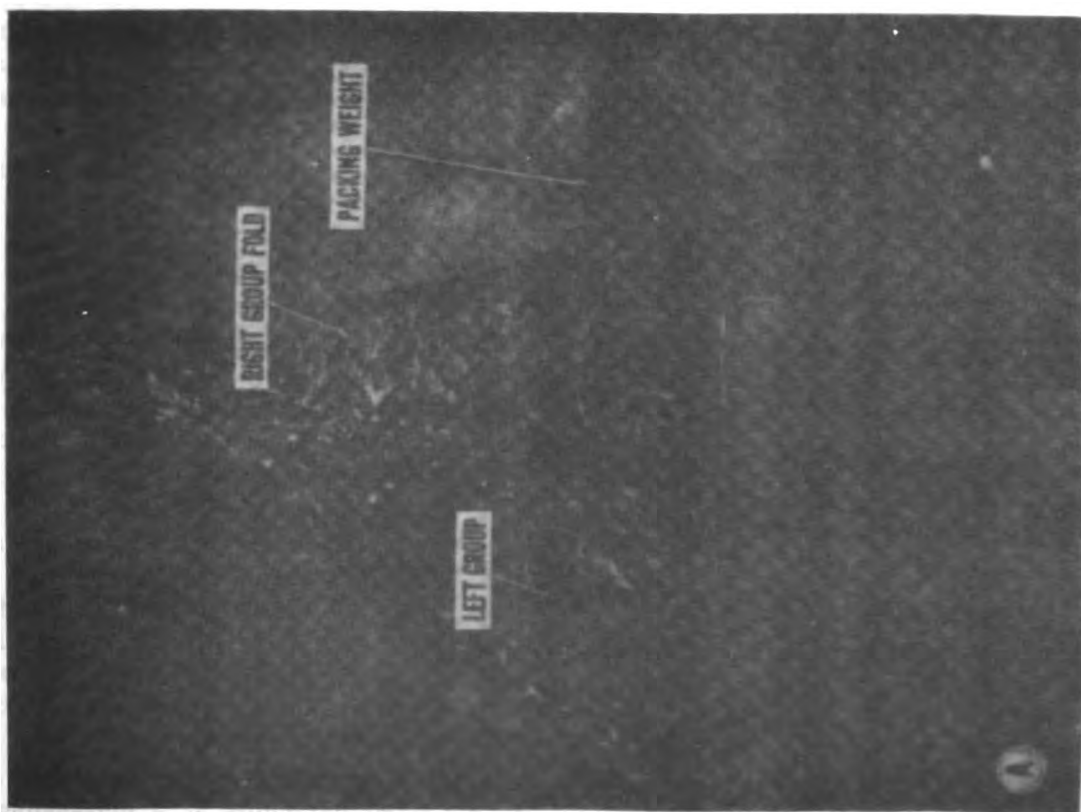
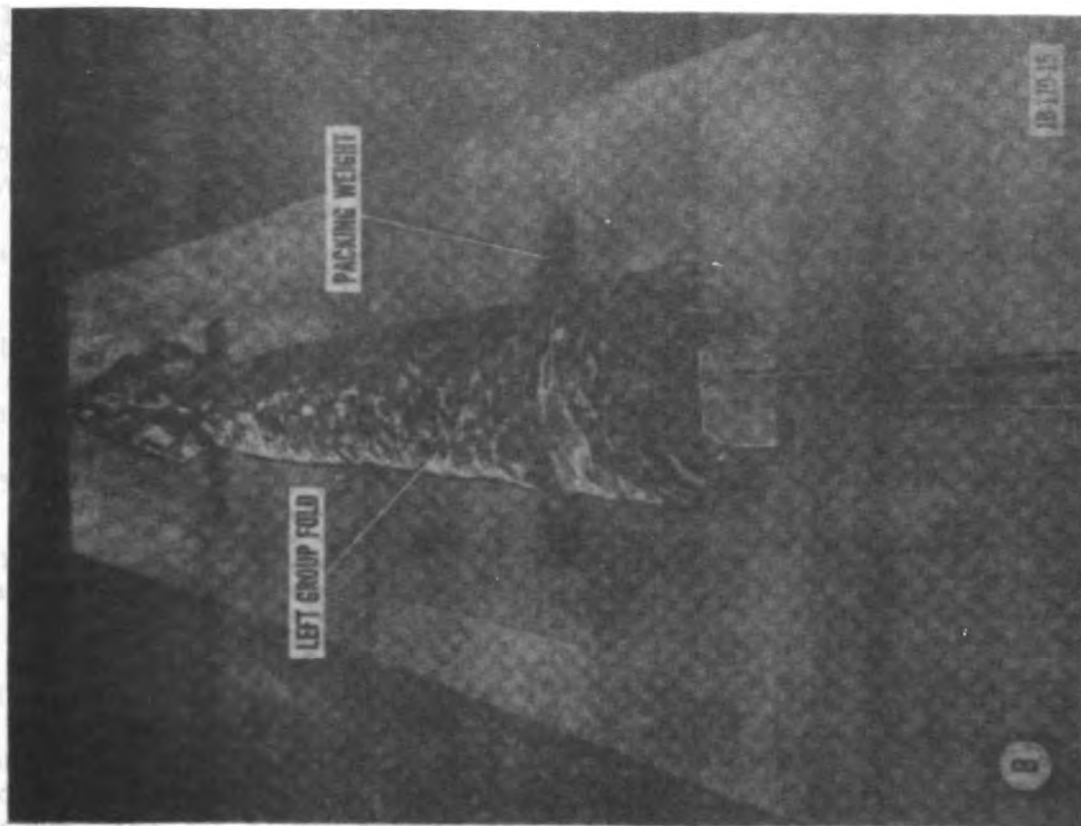


Figure 15. Right and left group of gores long-folded.

b. Grasp both groups of suspension lines approximately 12 inches below canopy skirt, and fold lines back, at point where lines join skirt, onto folded canopy.

c. Locate skirt hesitator on radial seam 14, and skirt hesitator tab on suspension line 14. Pull both sides of skirt hesitator up and around canopy. Pass a length of 1/4-inch type I cotton webbing down through left loop of both skirt hesitator and skirt hesitator tab, and up through right side of both loops (A, fig. 16). Make sure that all suspension lines are encircled by cotton webbing. Tie ends of webbing with surgeon's knot and locking knot (B, fig. 16), and cut off excess webbing.

14. Stowing Suspension Lines

The suspension lines must be carefully stowed in the pack to ensure proper deployment. Stow suspension lines as follows:

a. Open pack, and roll down sides to aid in stowing of lines.

b. Position suspension lines on inside bottom of pack with connector links at lower edge of pack (A, fig. 17).

c. Rotate pack one-fourth turn counterclockwise, holding risers in position on pack.

d. Form first stow at lower left, and secure stow with retainer band (B, fig. 17).

e. Form and secure second stow at lower right (C, fig. 17), making stows the width of pack.

f. Continue stowing suspension lines, stowing alternately from left to right until lines are stowed to within 12 to 14 inches of lower lateral band.

g. Turn pack one-fourth turn clockwise (D, fig. 17).

15. Stowing Canopy

The canopy is accordion folded on suspension lines, and the sides of the pack are rolled up to cover the canopy.

a. Remove bridle loop from apex hook.

b. Remove packing weight at skirt of canopy, and grasp skirt of canopy with right hand (A, fig. 18). While holding pack firmly with left hand, place canopy over stowed suspension lines until lower lateral band is even with edge of pack.

c. With left hand on canopy at edge of pack, and with right hand under canopy approximately 15 inches from left hand, accordion-fold the canopy onto pack (B, fig. 18).

d. Continue to accordion-fold canopy, removing all packing weights from canopy, until canopy is folded (C, fig. 18).

e. Roll sides of pack to top of folded canopy.

16. Attaching Static Line

The static line is attached to the bridle loop by means of a breakcord, formed from a 54-inch length of 1/4-inch wide, type I cotton webbing. Attach static line as follows:

a. Position breakcord attaching loop of static line adjacent to bridle loop.

b. Form a breakcord by triplefolding a 54-inch length of 1/4-inch wide, type I cotton webbing into an 18-inch length.

c. Pass one end of breakcord through bridle loop, with ends of breakcord of equal length. Stretch webbing taut. Pass each end of folded webbing through breakcord attaching loop of static line, from opposite directions passing ends through loop (A, fig. 19). Pull ends of webbing through attaching loop until approximately 3-inch loop is formed by webbing (A, fig. 19). Tie webbing ends together over attaching loop with a surgeon's knot and locking knot (B, fig. 19).

d. Cut off excess webbing, leaving ends approximately 2 inches long.

17. Attaching Drogue

When parachutists are to follow cargo bundles equipped with the T-7A cargo parachutes, a drogue is attached to each cargo parachute static line as a safety factor. The drogue may be attached during packing procedures or at a marshaling area.

a. *During Packing Procedures.* Attach drogue during packing procedures after attaching static line, passing attaching cord of drogue through the breakcord attaching loop of static line, and then passing drogue through loop of attaching cord. Stow drogue on top of apex lines (fig. 20), ensuring that drogue does not become entangled with apex lines.

b. *At Marshaling Area.* To attach drogue to a packed parachute at a marshaling area,

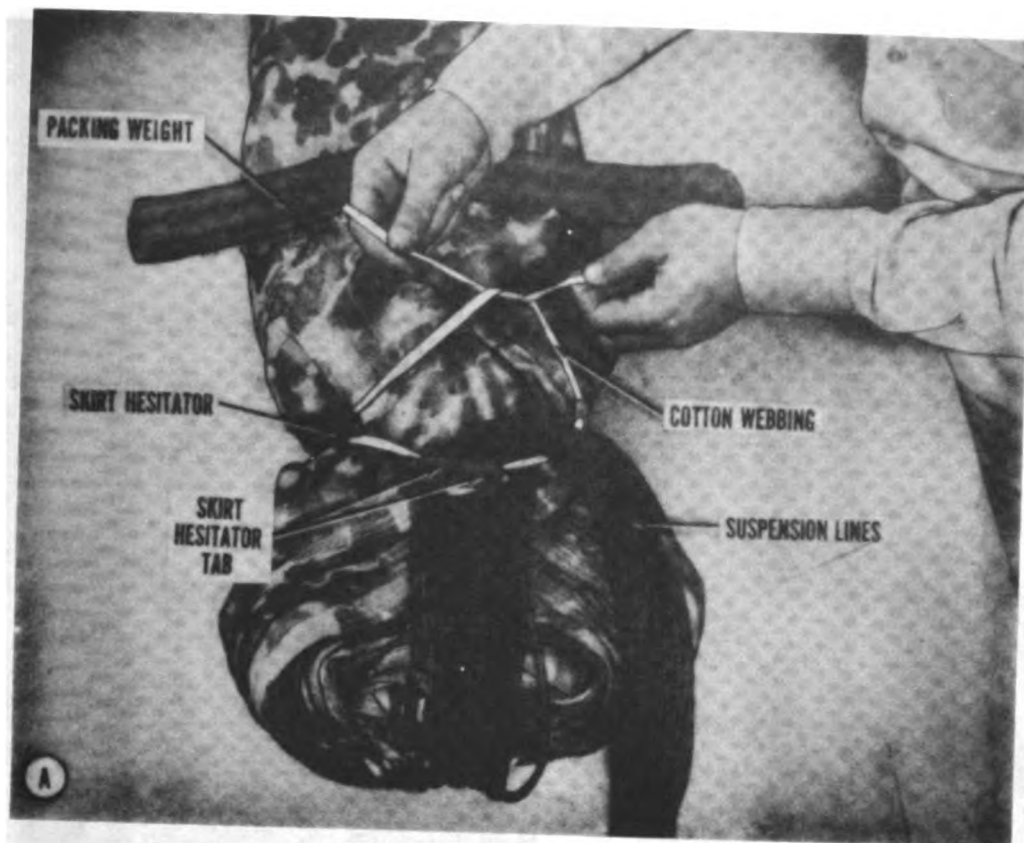


Figure 16. Tying skirt hesitator.

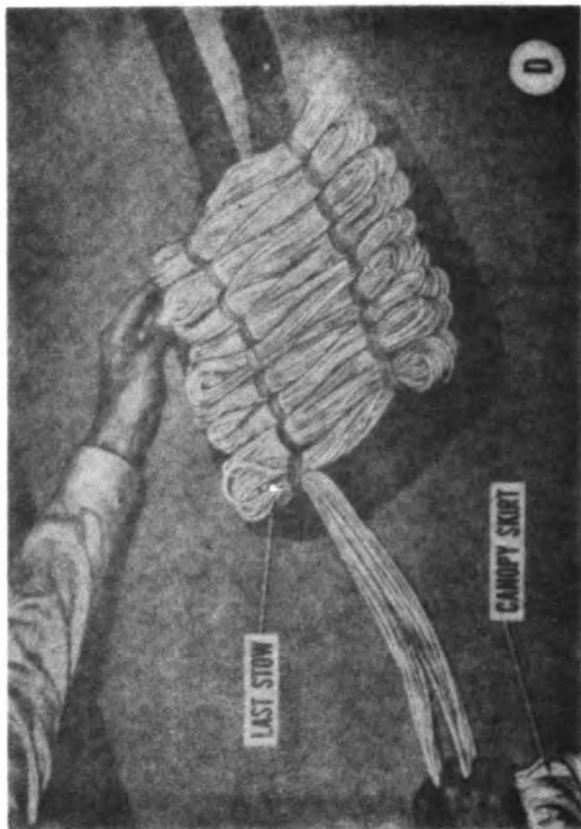
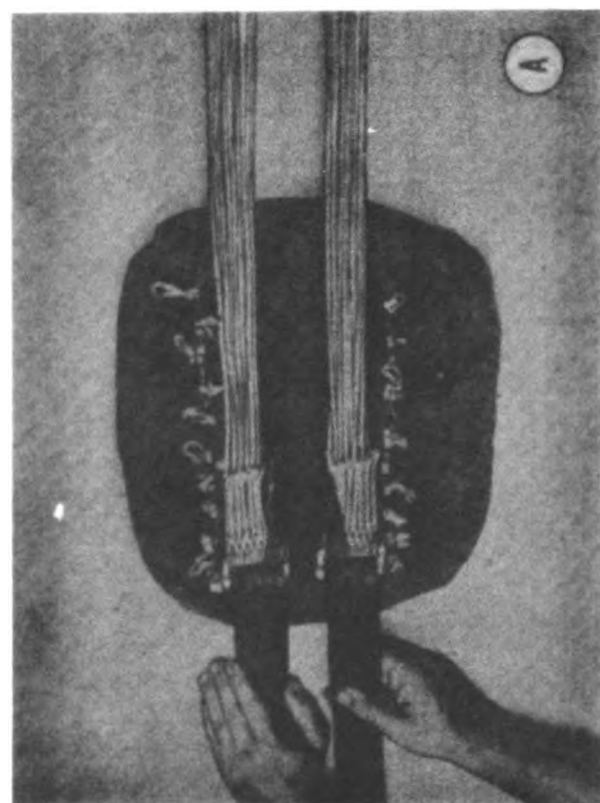
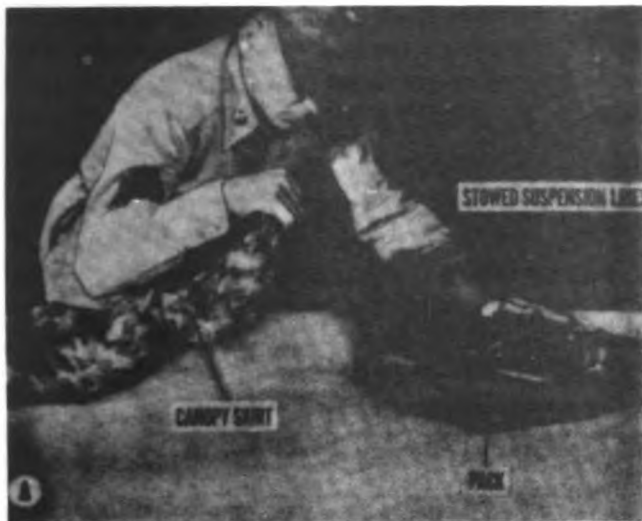


Figure 17. Stowing suspension lines.



pull pack flaps as far apart as possible without cutting pack closing tie, locate breakcord attaching loop, attach and stow drogue as in *a* above.

18. Closing Pack and Stowing Static Line

The pack closing flaps are folded over canopy and secured with cotton webbing, and the static lines are then accordion folded across pack. Close pack, and stow static line as follows:

a. Fold pack closing flaps over stowed canopy.

b. Insert one end of length of 80-pound, $\frac{1}{4}$ -inch type I cotton webbing through three closing loops on closing flaps, through pack opening loop of static line, and through fourth closing loop. Draw webbing tight, and tie ends with surgeon's knot and locking knot (fig. 21). Cut off free ends of webbing 1 inch from locking knot.

c. Fold static line in accordion folds approximately 12 inches long, and stow on top of pack in retainer rubber bands (fig. 22).

d. Safety the risers as shown in figure 23 for ease of handling.

Figure 18. Stowing canopy.

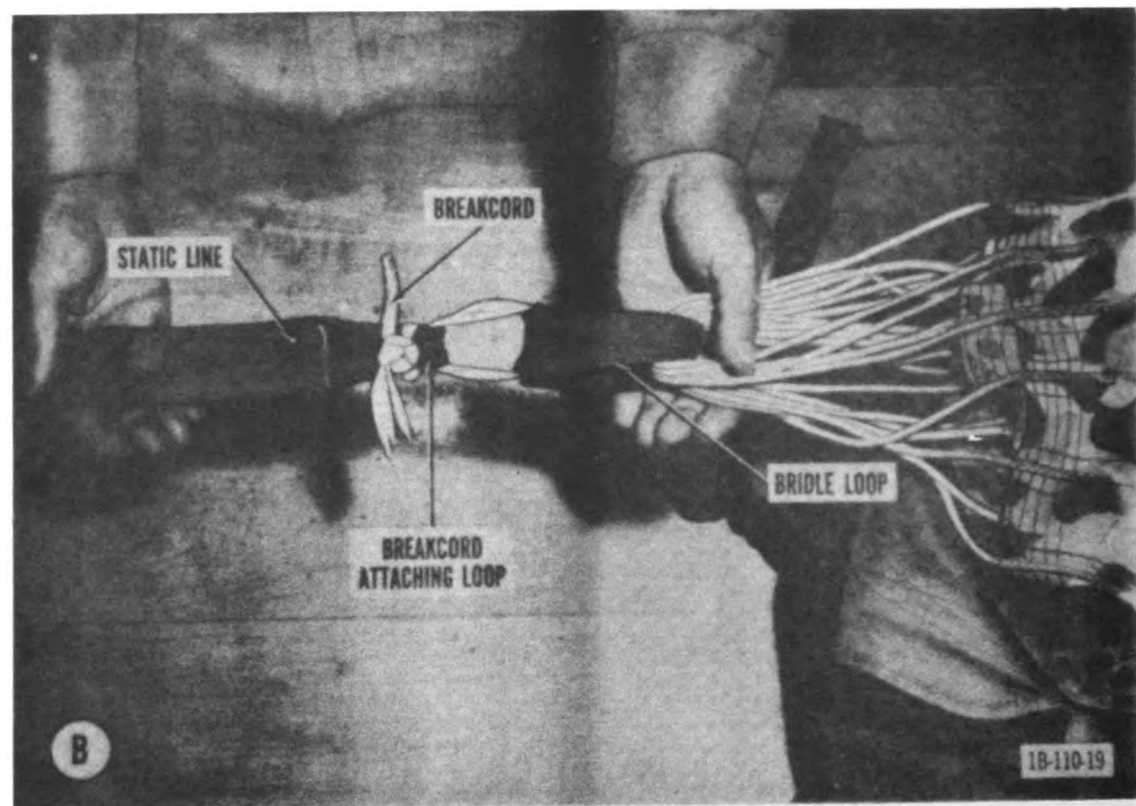
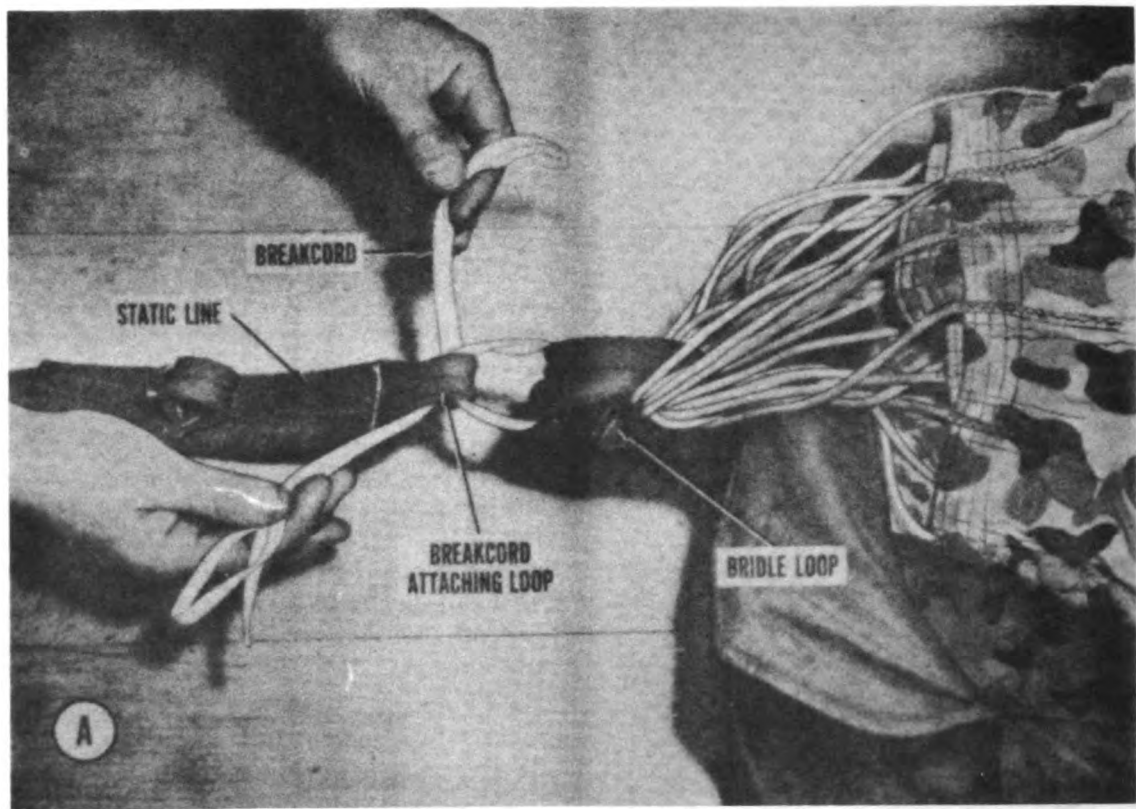


Figure 19. Attaching static line.

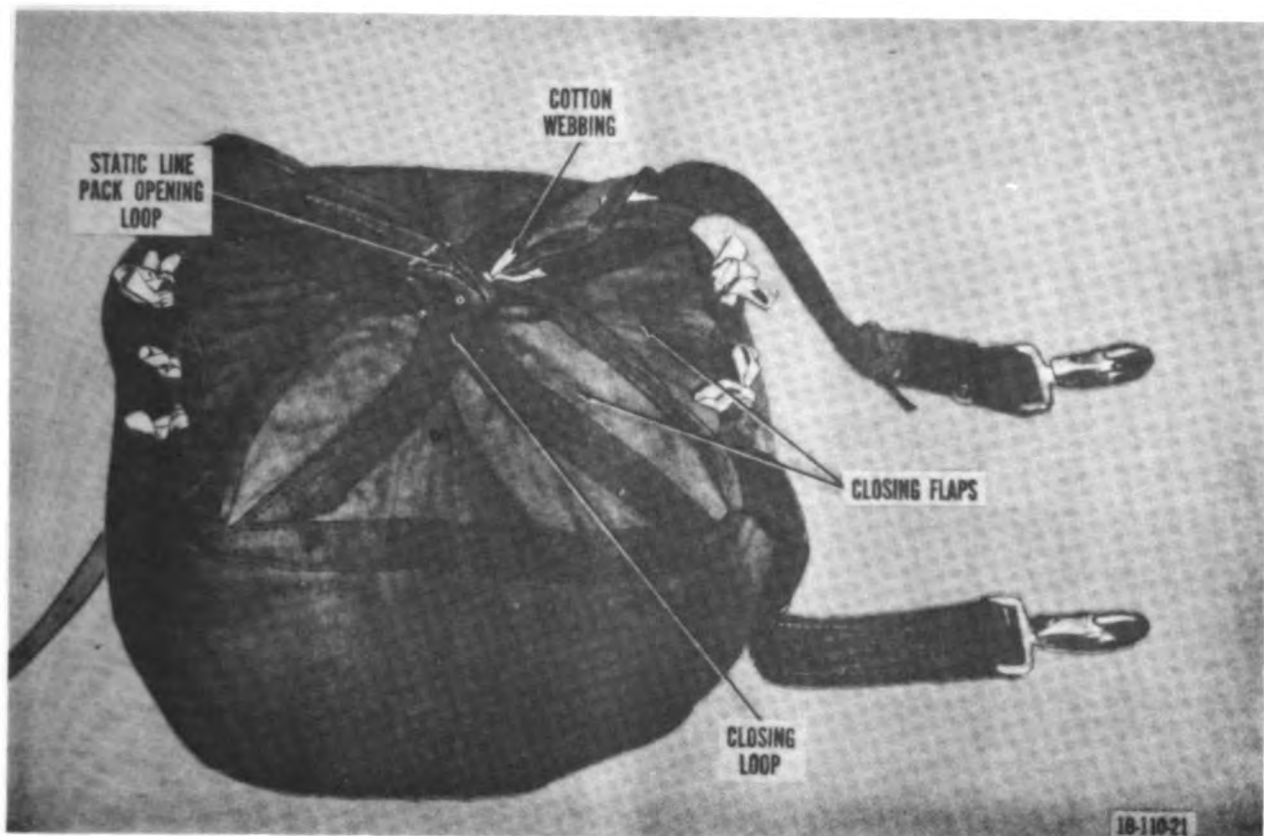


Figure 20. Drogue attached during packing procedures.

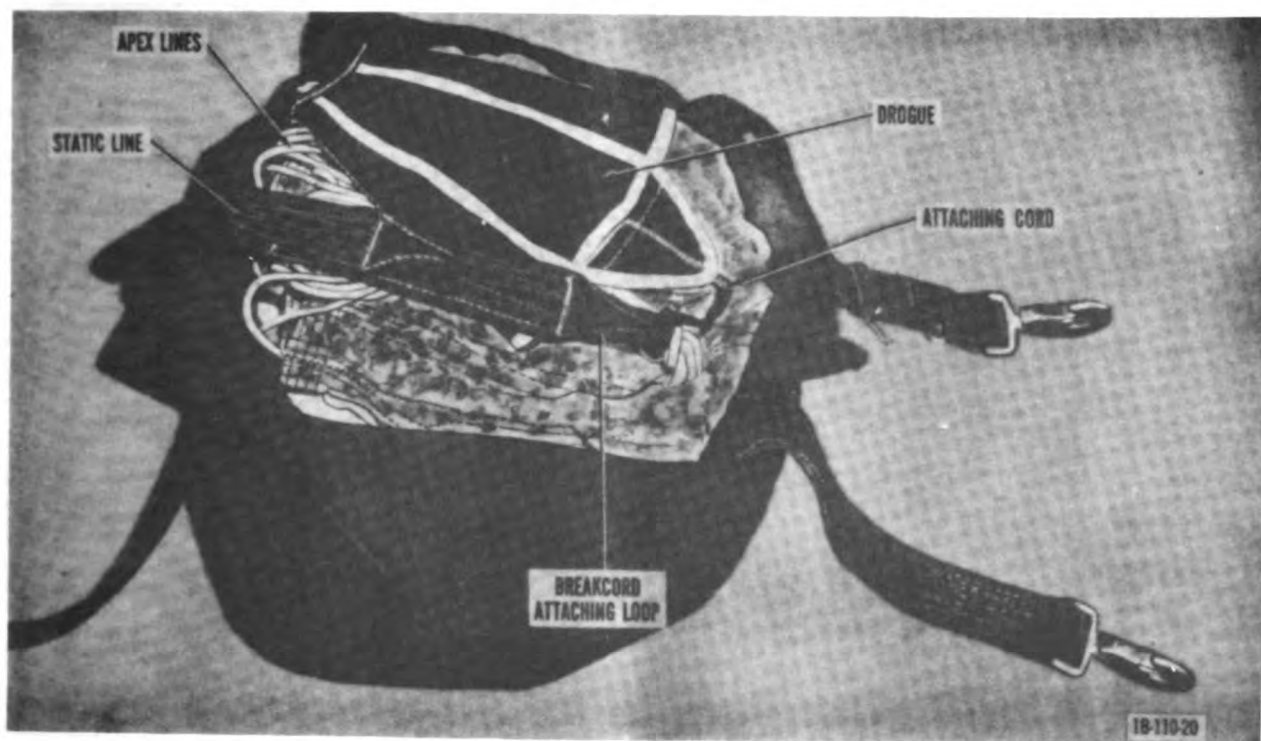


Figure 21. Pack with flaps closed and secured.

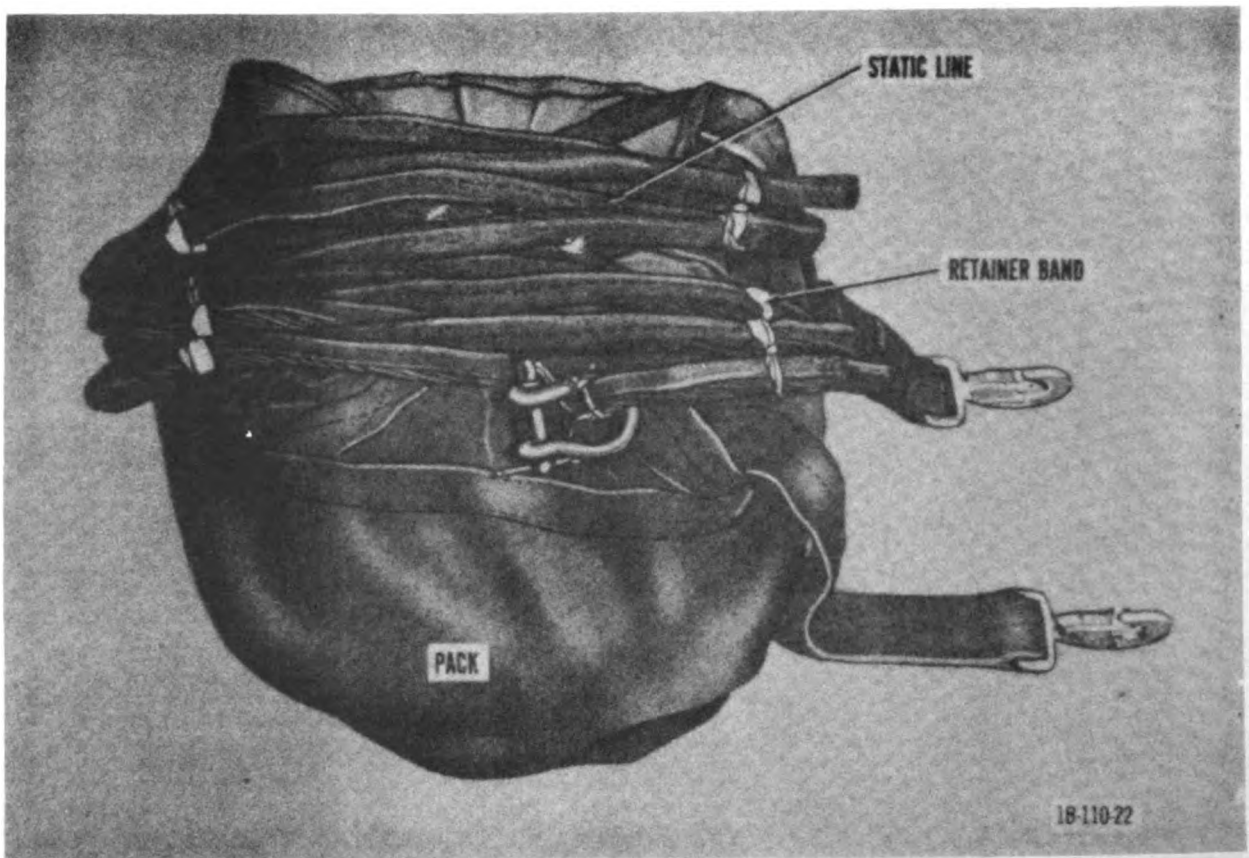


Figure 22. Static line accordion folded.

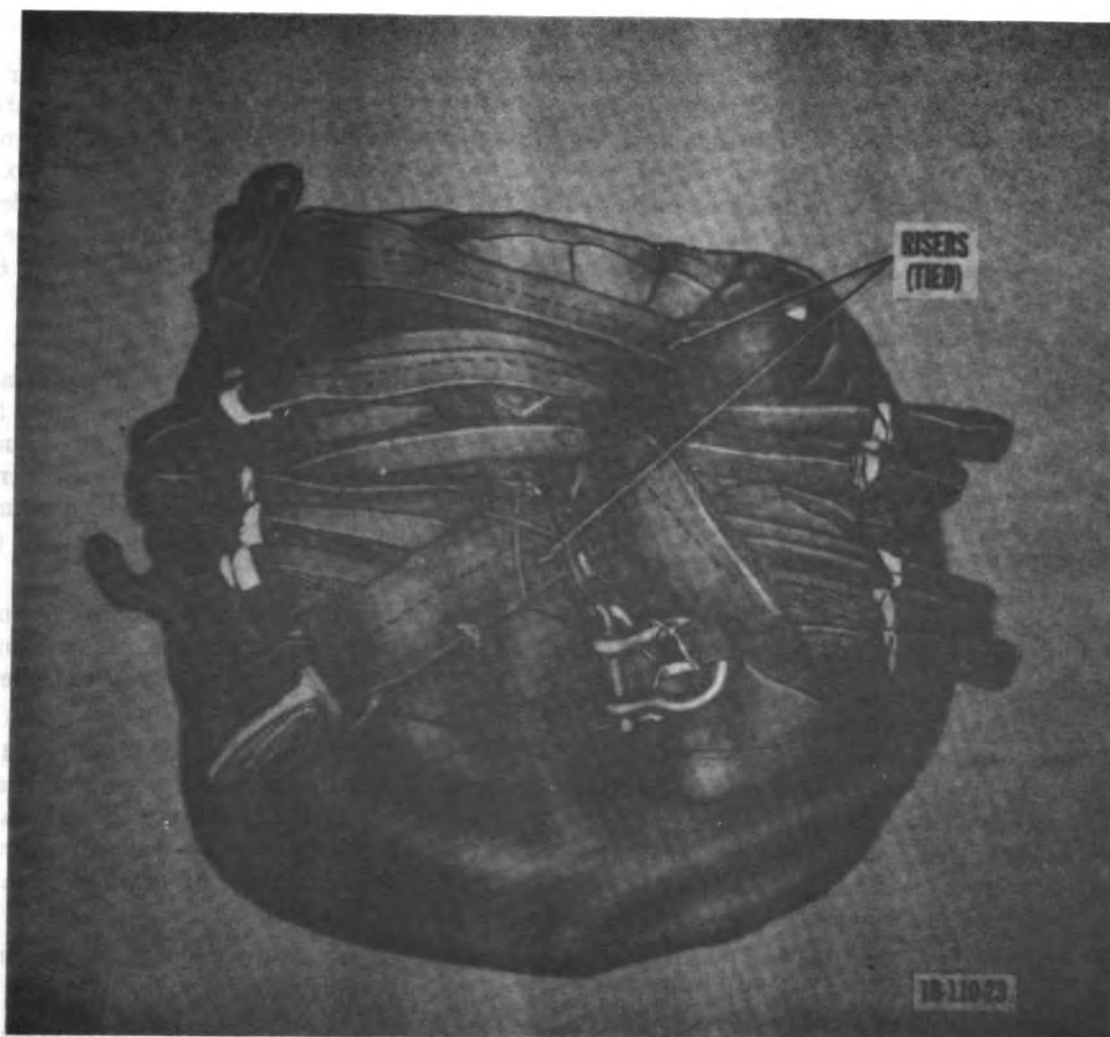


Figure 23. Risers tied for handling.

SECTION IV

REPAIR PROCEDURES

19. General

a. Repair Limitations. Only those repairs prescribed in the Maintenance Allocation Chart (app. II) are authorized. A damaged parachute that exceeds the repair limitations must be tagged and disposed of according to AR 750-1670-2.

b. Searing and Dipping. When cutting tape or webbing for repairs, sear or dip the tape or webbing ends.

(1) *Searing.* Ends of nylon tape or webbing may be seared by pressing them lightly against a hot surface until the nylon has melted sufficiently to prevent fraying. Care must be exercised to avoid forming a sharp edge or creating a lumped effect by over-searing.

(2) *Dipping.* Ends of all cotton or nylon tape or webbing may be dipped in a melted mixture of 50-percent beeswax and 50-percent paraffin. Dip ends of tape or webbing that are to be sewed, to a depth of one-half inch in paraffin-beeswax mixture. Dip all webbing ends that are not to be sewed to a depth of 1½ inches. Make certain that paraffin-beeswax mixture is fully melted before webbing is dipped.

c. Stitching. Make all stitching for repairs with thread that is contrasting in color to material being sewed. Thread of noncontrasting color may be used only if contrasting color is not available. Make all stitches with ticket No. E nylon thread, sewing 7 to 11 stitches per inch unless otherwise stated. Use Singer Model 31-15 sewing machine or equivalent for all straight stitching, and Singer Model 17W15 sewing machine for all zigzag stitching unless otherwise stated. Make all restitching directly over old stitches. Lock all straight stitching at least one-half inch at each end.

20. Repairing Canopy

The flat circular-type nylon canopy consists of 28 gores, upper and lower lateral bands,

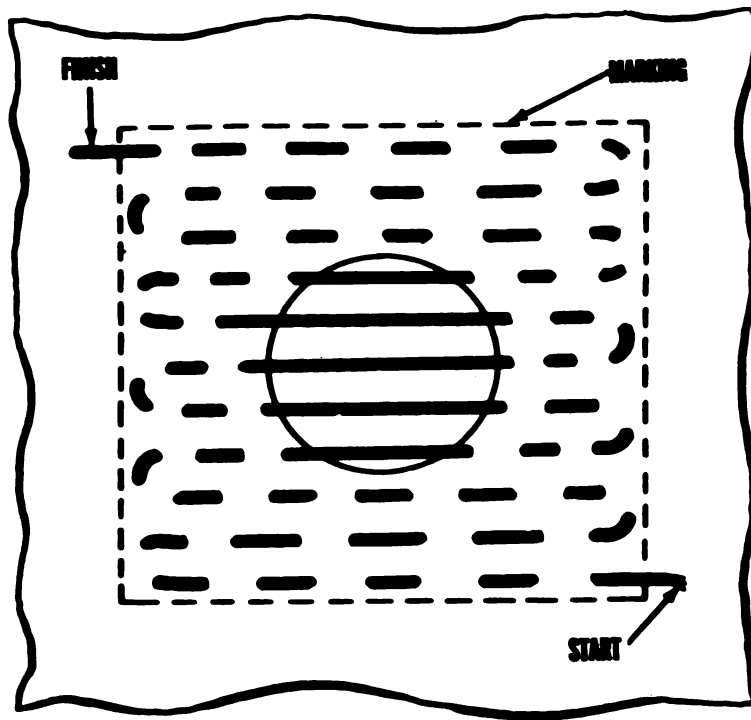
skirt hesitator, 28 V-tabs, 14 canopy lines, a bridle loop, and 4 connector links. Each gore consists of 4 sections. The 14 canopy lines form 28 suspension lines, 28 apex lines, and 28 radial seam lines. The canopy may be repaired by restitching loose or broken stitching, darning or patching of gore section fabric, patching of radial seam, replacing of bridle loop, or splicing of suspension lines. Repair canopy as follows:

a. Restitching. Restitch all loose or broken stitching according to original construction. Follow general procedures for restitching (par. 19c) all components except bridle loop. When restitching bridle loop, use Singer Model 97-10 sewing machine or equivalent, and sew 5 to 8 stitches per inch with ticket No. 6 nylon thread.

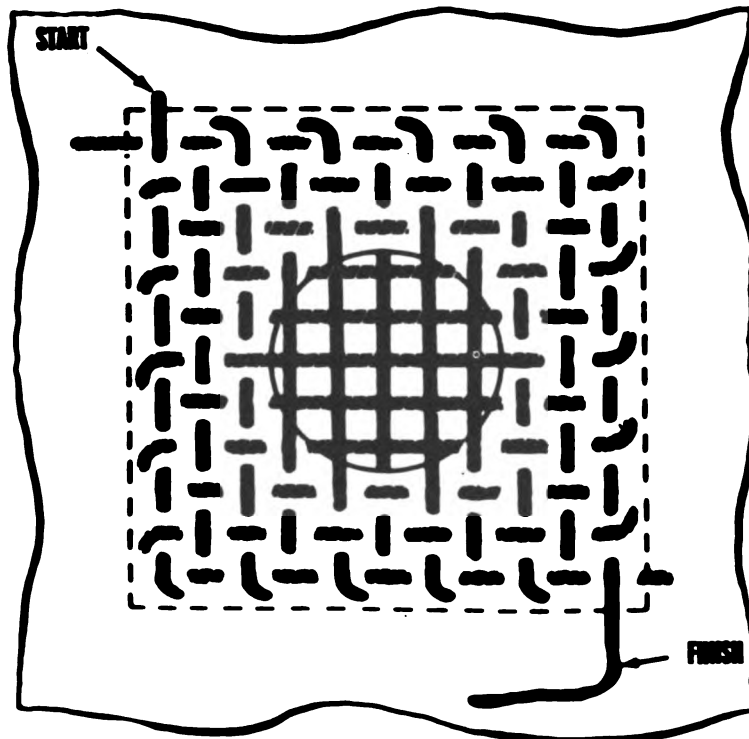
b. Darning Gore Fabric. A hole or tear in the gore fabric that does not exceed 1 inch may be darned, provided that no more than 3 darns are made per section. Make all darns with ticket No. A nylon thread, using Singer Model 47W70 darning machine. If a darning machine is not available, the following method may be used:

- (1) Mark a circle or square around the hole to be darned. Make sure that marking clears edges of hole by at least one-fourth inch.
- (2) Following step 1 of figure 24, begin darning at one edge of marked area on fabric, running thread back and forth parallel to warp or filling until opposite edge of marked repair area is reached.
- (3) Then follow step 2 of figure 24 to complete darn.

c. Patching Gore Fabric. A damaged gore may be patched, provided that the size of the finished patch does not exceed 18 inches in length or diameter and that the maximum number of patches used does not exceed 3 per section. Determine type of patch required by



STEP 1



STEP 2

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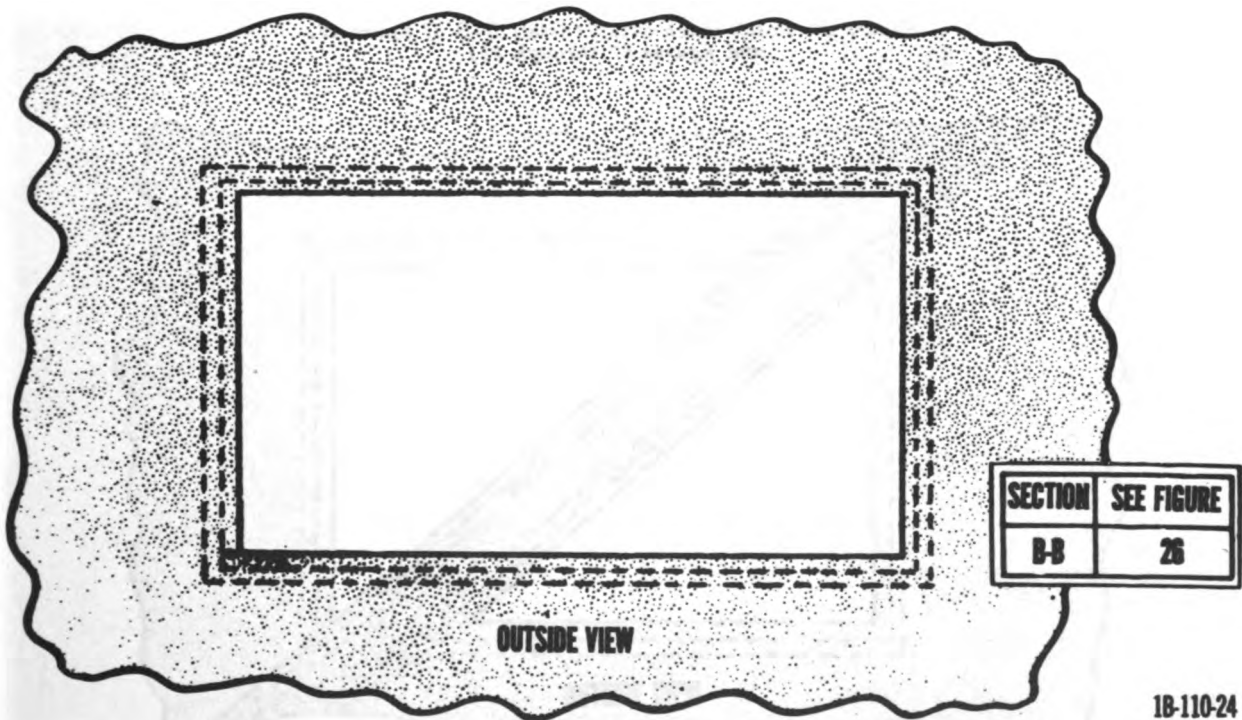
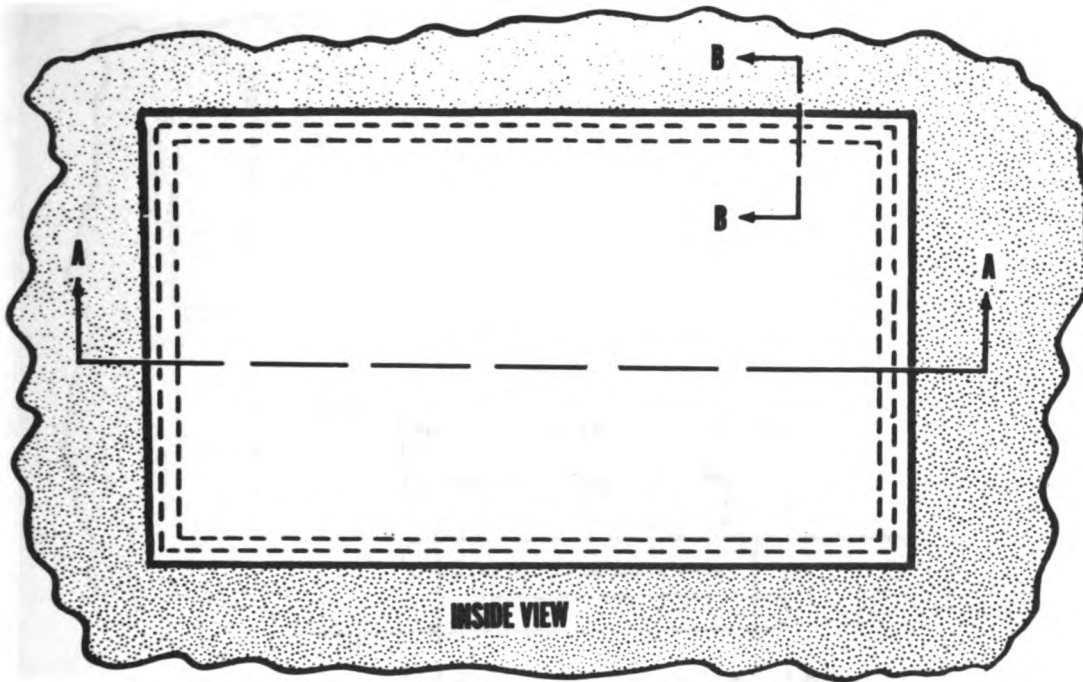
Figure 24. Steps for hand darning gore fabric.

referring to figures 25 through 33, and install patch as follows:

- (1) Place canopy inside out on a repair table, centering area to be patched on working area of table. Secure damaged section to table with pushpins, placing pins through diagonal and radial seams. Make certain that pins are not placed through radial seam lines.
- (2) Mark a rectangle or triangle, depending upon shape of required patch, around hole to be patched.
- (3) Cut fabric along line of rectangle or triangle marked in (2) above, being careful not to cut any seams. If lines cross a seam, cut fabric one-half inch along both sides of seam for required distance. Then cut fabric diagonally at corners so that edges along seams can be folded over one-half inch and all other edges can be folded over five-eighths of an inch. Fold edges over,

and baste them down neatly with ticket No. A nylon thread, sewing 2 stitches per inch.

- (4) If hole or tear in gore extends into radial seam, patch the seam according to instructions in *d* below.
- (5) Mark a rectangle or triangle on patch material, with both length and width of patch material exceeding length and width of prepared hole ((3) above) by $2\frac{3}{4}$ inches. Warp and filling of patch should match, as closely as possible, warp and filling of gore being repaired. Cut patch from material, and fold under edges of patch five-eighths of an inch. Baste edges.
- (6) Position patch over damaged area on gore, with basted edges down, and baste patch to gore.
- (7) Remove pins holding canopy to table, and sew patch to gore according to details for appropriate patch (figs. 25-33).



1B-110-24

Figure 25. Standard patch.

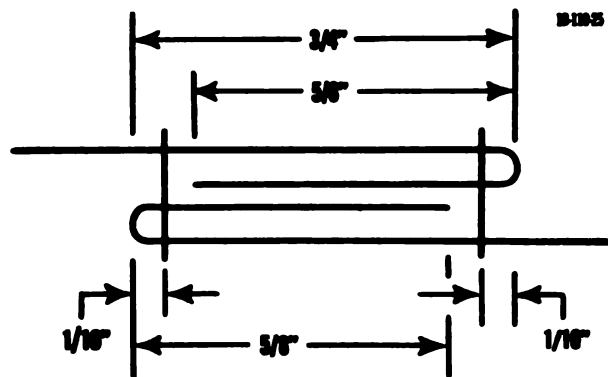
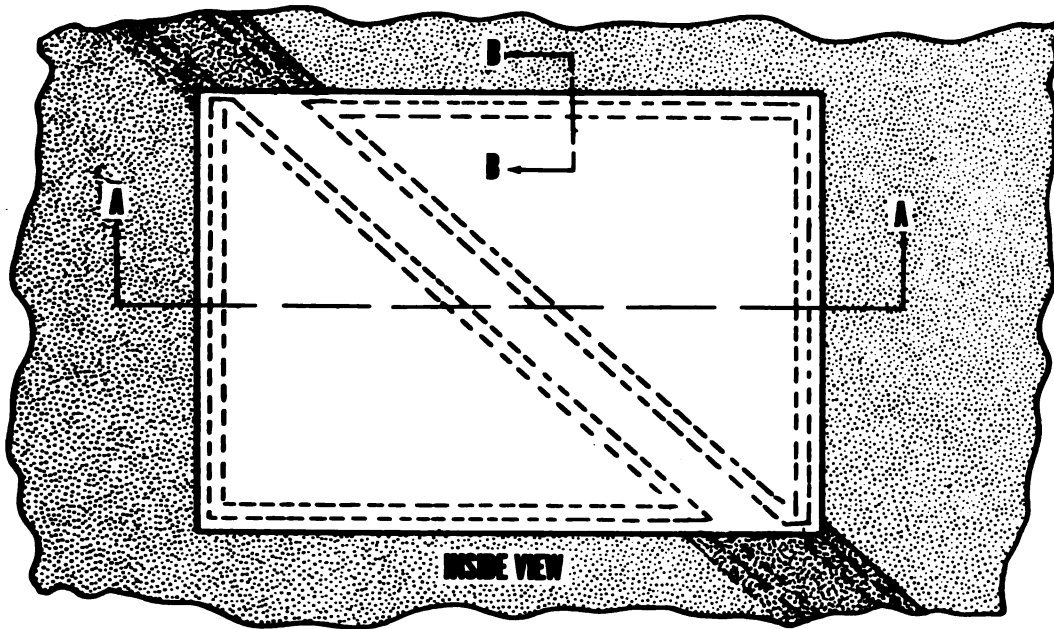
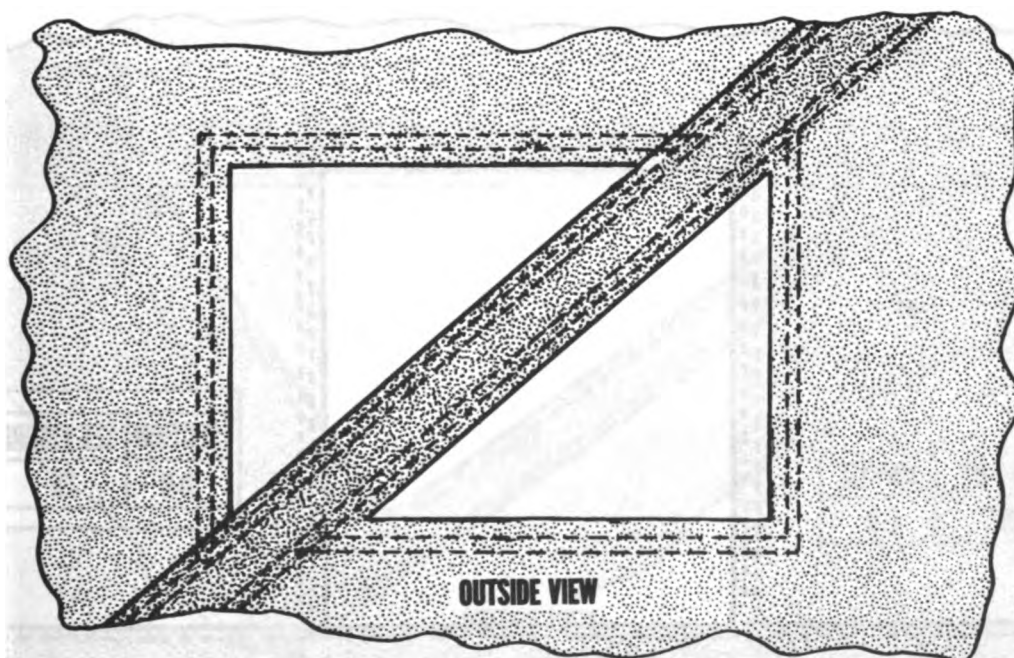


Figure 26. Patch stitch detail (detail B-B of figure 25, and figures 27 through 33).

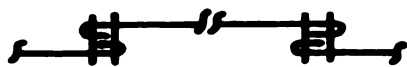
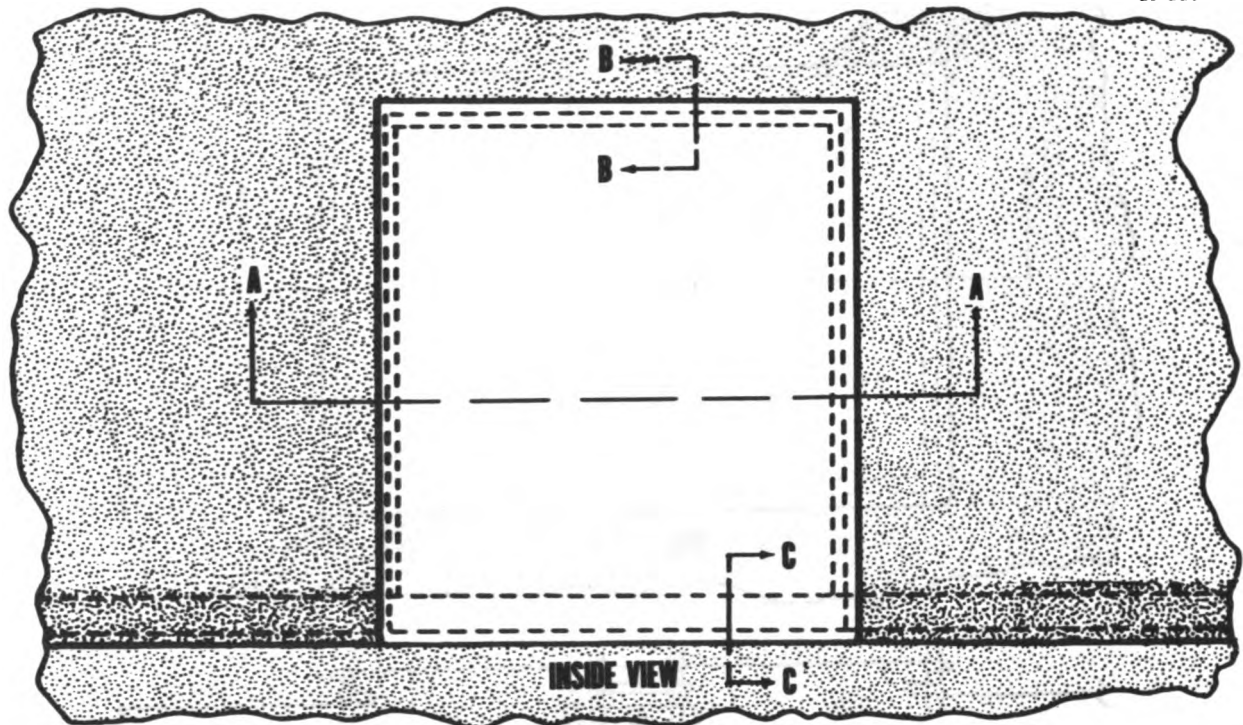


SECTION	SEE FIGURE
B-B	26



1B-110-26

Figure 27. Cross-seam patch, radial seam.



SECTION A-A



SECTION B-B

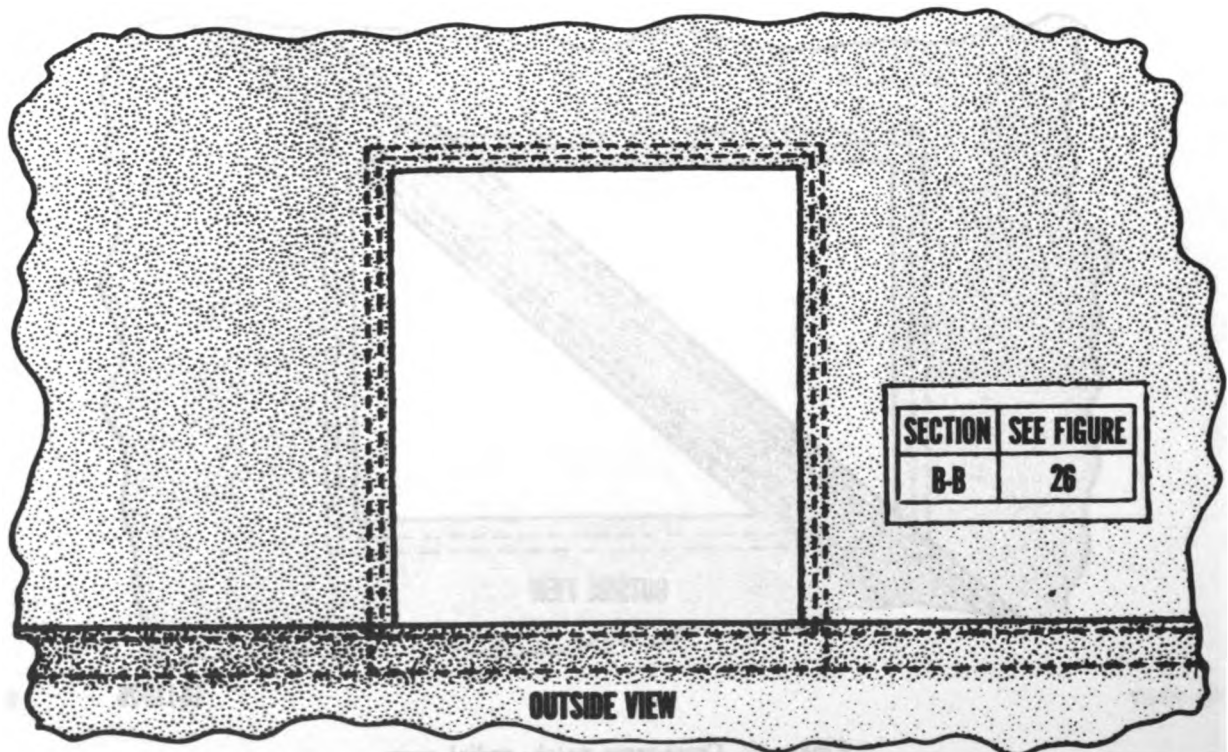
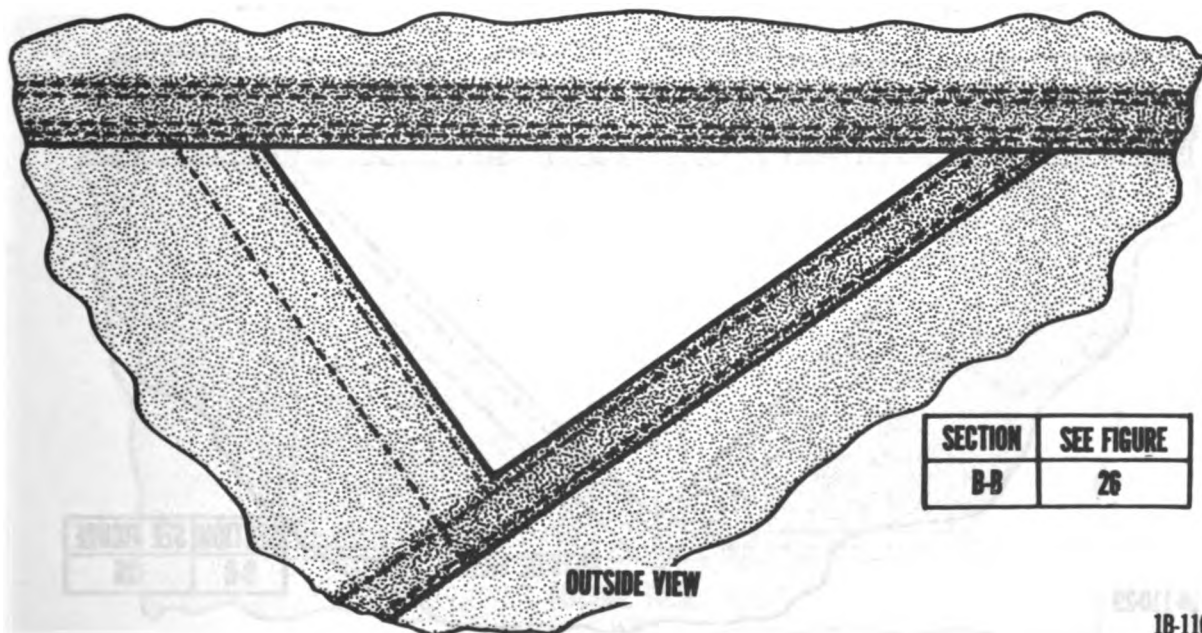
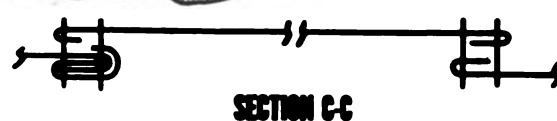
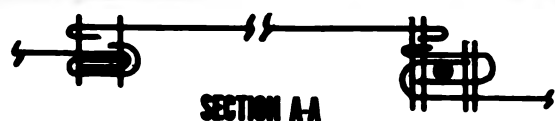
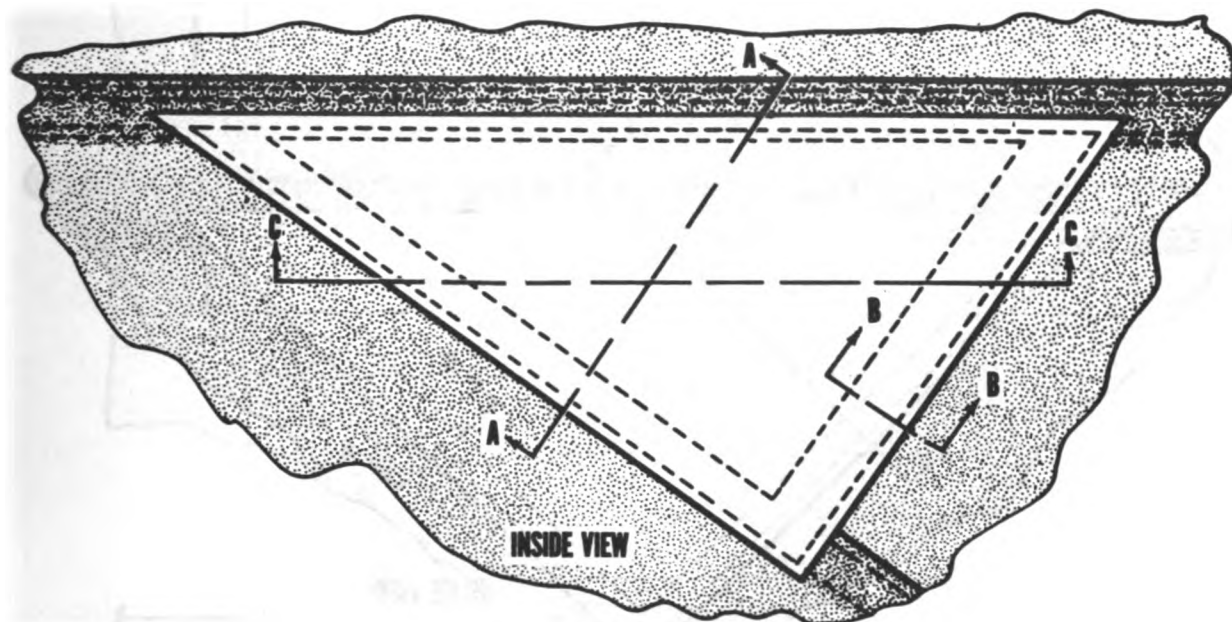


Figure 28. Rectangular or square patch, including diagonal seam.



SECTION	SEE FIGURE
B-B	26

1B-110-28

Figure 29. Corner patch, including radial and diagonal seams.

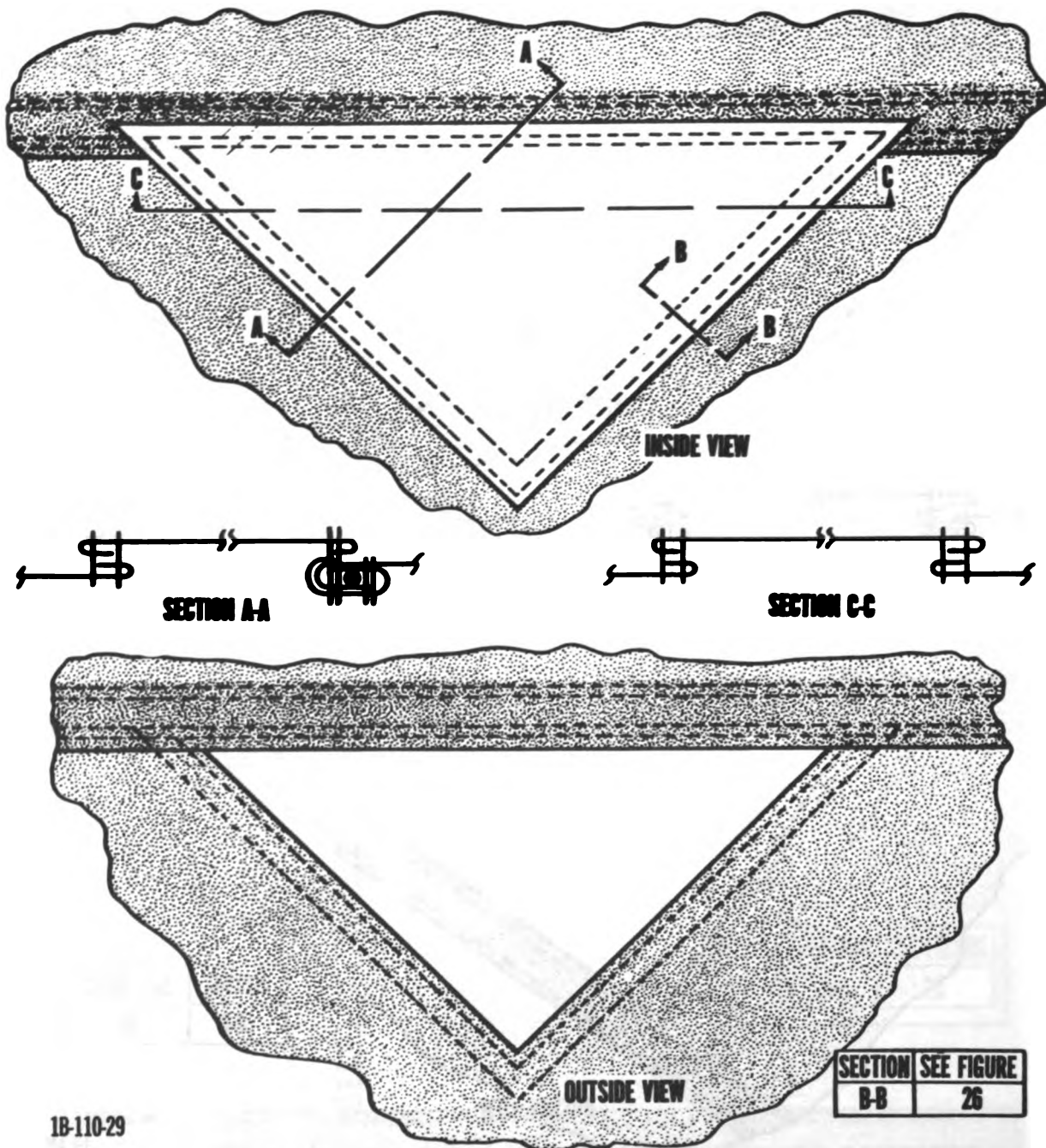
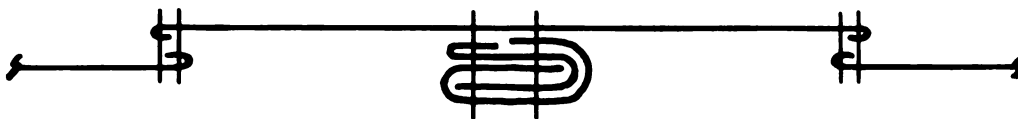
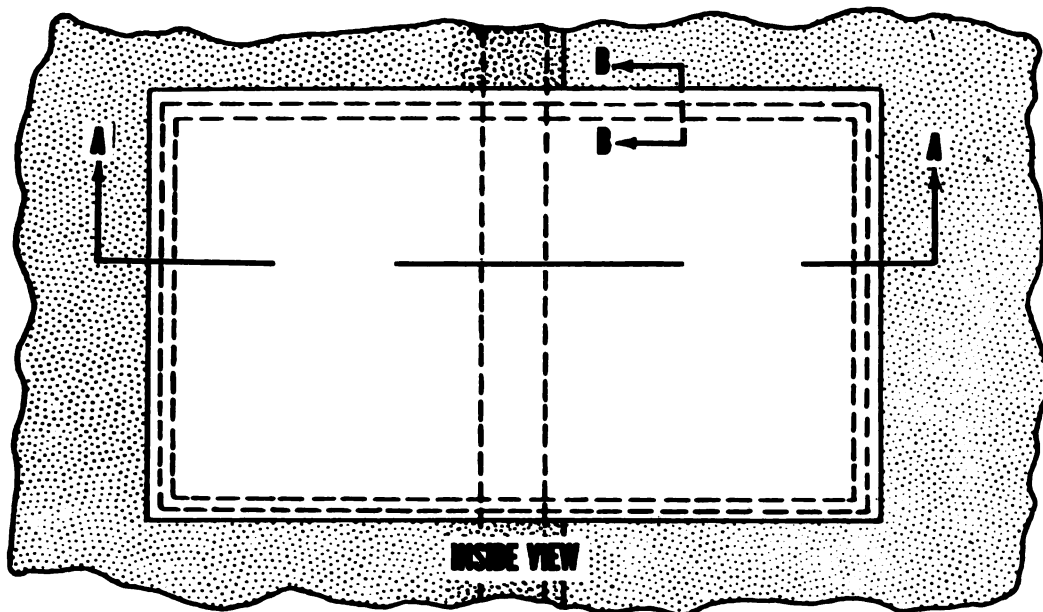


Figure 30. Triangular patch, including radial seam.



SECTION	SEE FIGURE
B-B	26

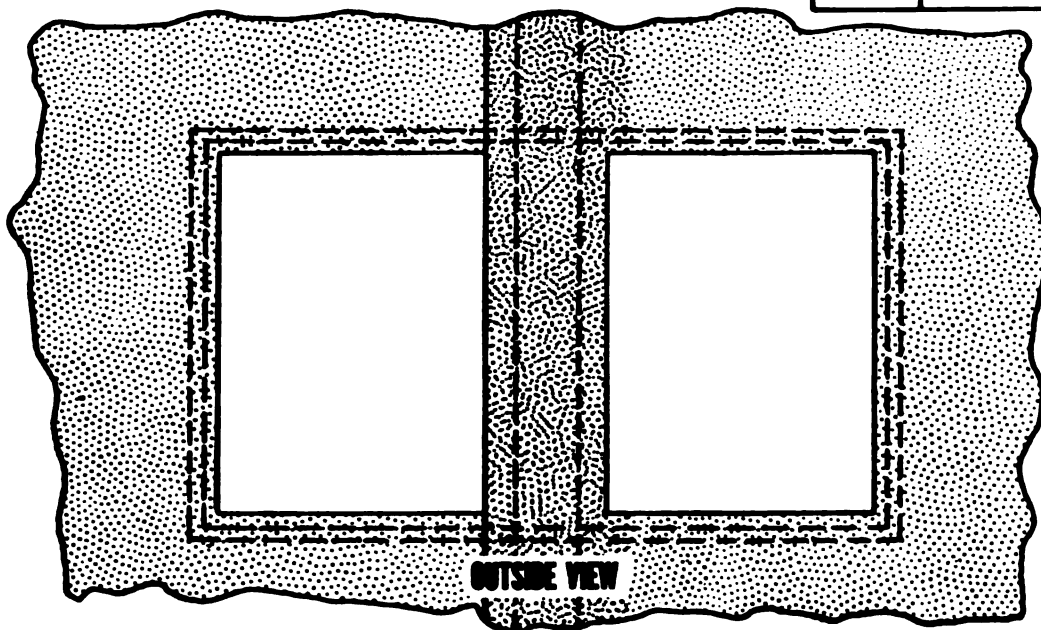
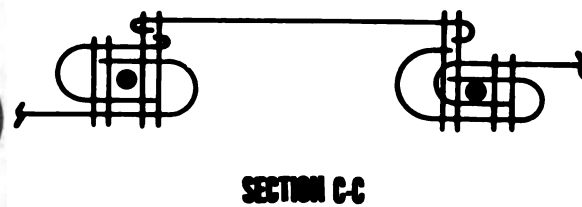
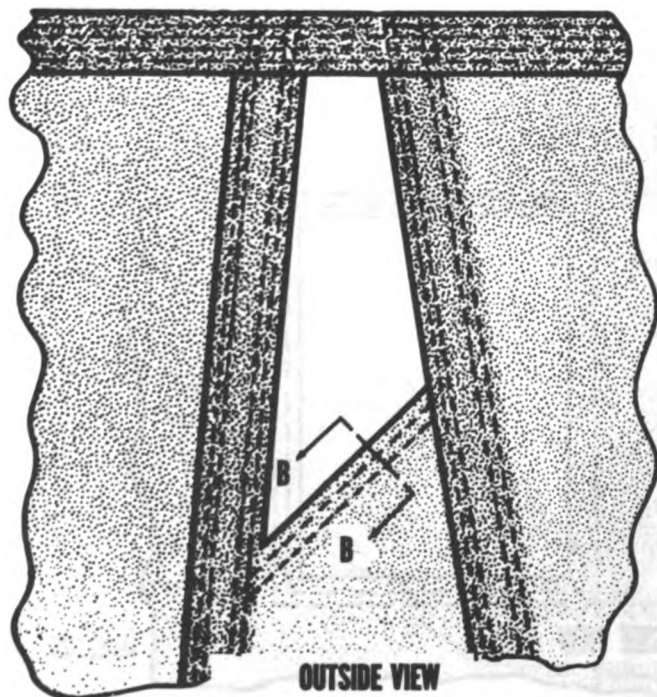
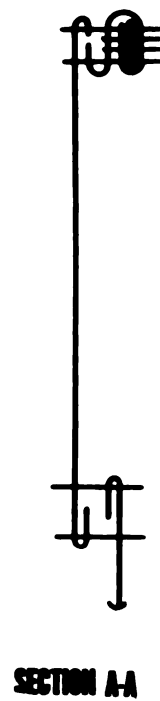
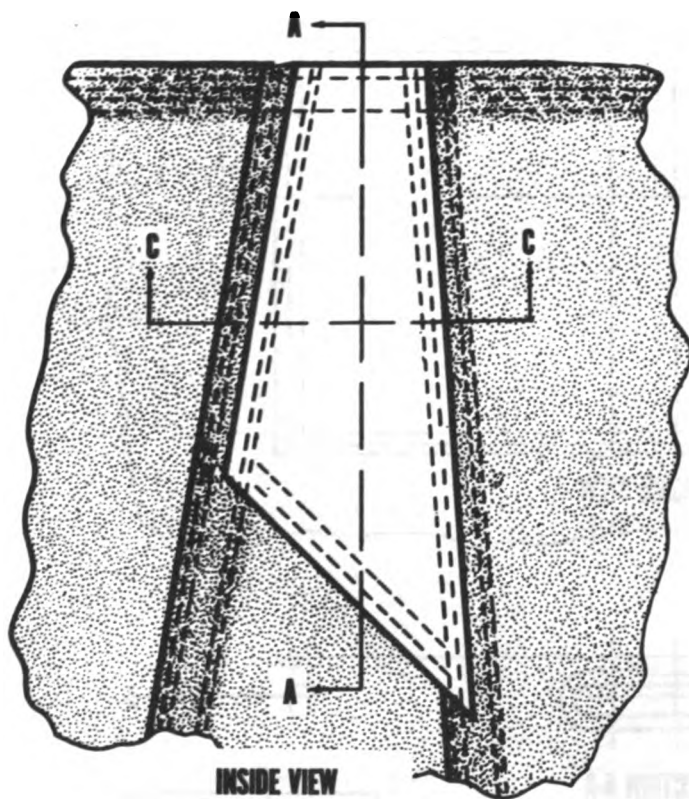


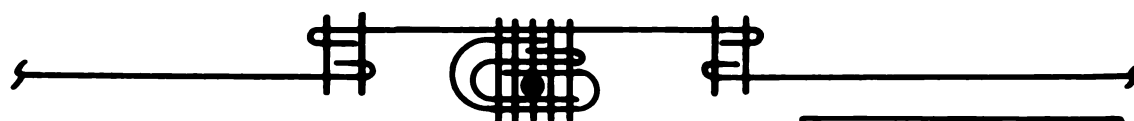
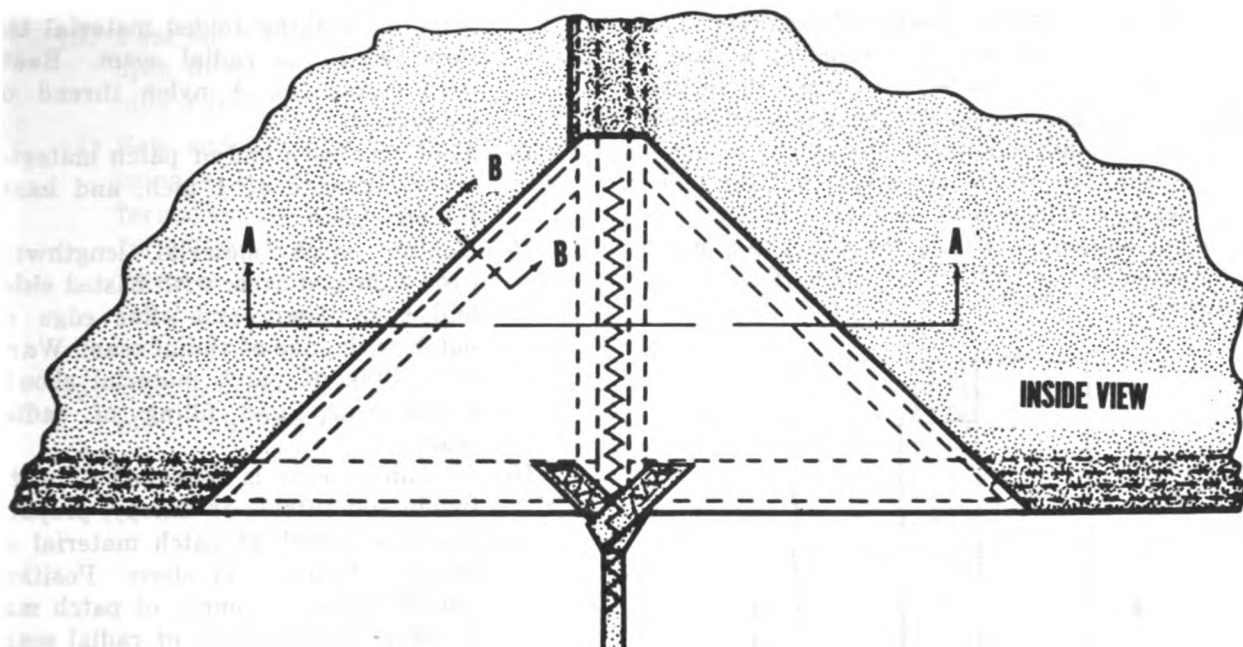
Figure 31. Cross-seam patch, diagonal seam.



SECTION	SEE FIGURE
B-B	28

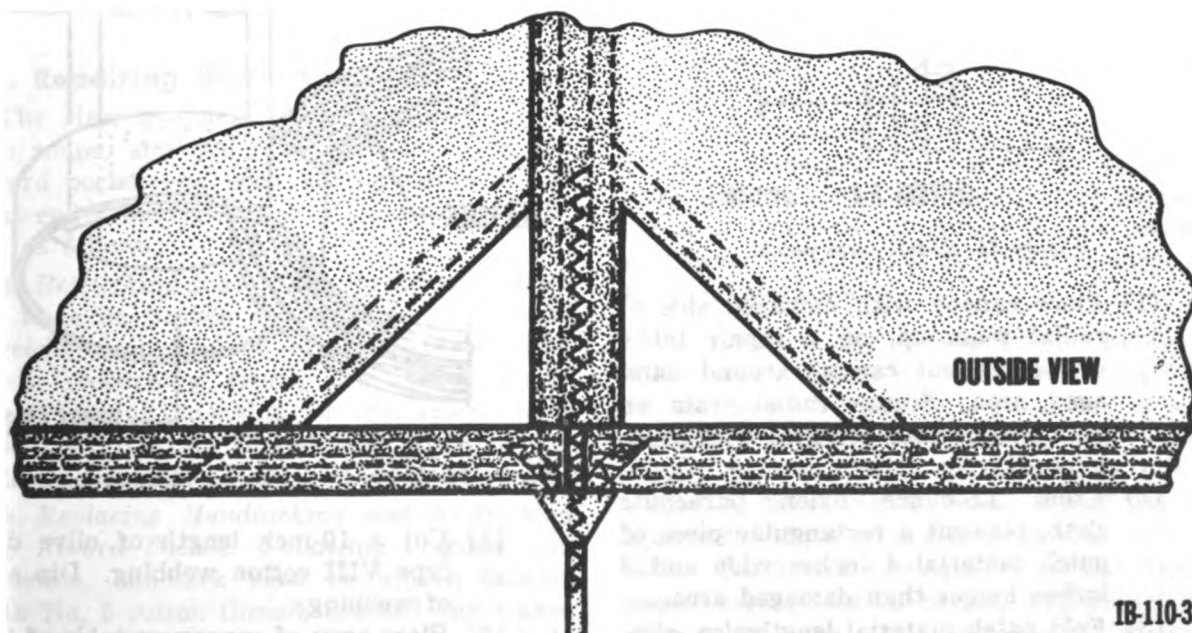
1B-110-31

Figure 32. Patch in section No. 4, including radial seams and upper lateral band.



SECTION A-A

SECTION	SEE FIGURE
B-B	26



IB-110-32

Figure 33. Cross-seam patch, radial seam, including lower lateral band.

d. Patching Radial Seam. Holes, tears, or rips in either one or both sides of a radial seam that do not exceed 10 inches in length may be patched, provided the damaged seam is strong enough to support the patch. If parts of the seam have been torn away or if the seam is otherwise damaged to such an extent that it will not support a patch, the parachute must be condemned. Patch radial seam (fig. 34) as follows:

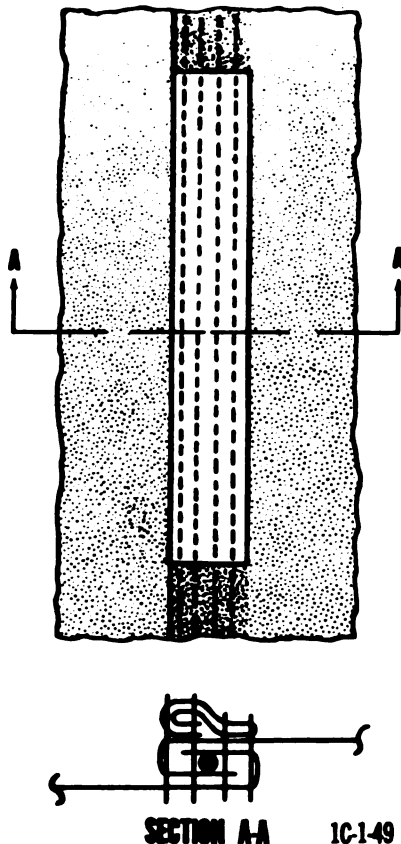


Figure 34. Radial seam patch.

- (1) Place canopy with damaged side of radial seam up, on a repair table, smoothing out canopy around damaged area. Secure radial seam on each side of damaged area with push-pins.
- (2) From 1.6-ounce nylon parachute cloth, bias-cut a rectangular piece of patch material 4 inches wide and 4 inches longer than damaged area.
- (3) Fold patch material lengthwise, aligning raw edges. Fold raw edges approximately one-half inch back on

material, making folded material the same width as radial seam. Baste with ticket No. A nylon thread or equivalent.

- (4) Fold over each end of patch material for a distance of 1 inch, and baste folded ends.
- (5) Center patch material lengthwise over damaged area, with basted sides and ends down, and align edge of patch with edge of radial seam. Warp and filling of patch material should match warp and filling of radial seam.
- (6) If radial seam is damaged on both inside and outside of canopy, prepare a second length of patch material as in (2) through (4) above. Position and baste second length of patch material on opposite side of radial seam as in (5) above.
- (7) Sew patch to radial seam according to details in figure 34. Do not stitch through radial seam line.

e. Replacing Bridle Loop. Replace a damaged bridle loop (fig. 35) as follows:

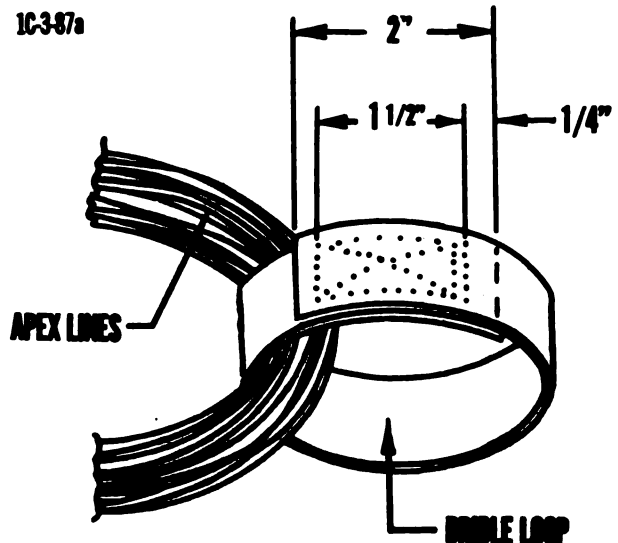


Figure 35. Bridle loop, showing construction details.

- (1) Cut a 10-inch length of olive drab type VIII cotton webbing. Dip ends of webbing.
- (2) Place apex of canopy on table of Singer Model 7-33 sewing machine or equivalent.

- (3) Pass one end of webbing through all apex lines, and overlap ends of webbing 2 inches.
- (4) Sew ends of new webbing together, using a $1\frac{1}{2}$ -inch single-X box-stitch formation, so that each end of stitch formation will be one-quarter inch from ends of webbing. Sew 5 to 8 stitches per inch with ticket No. 6 nylon thread.
- (5) Cut damaged webbing, and remove old bridle loop from apex lines.

f. Splicing Suspension Lines. Suspension lines damaged by friction burns, cuts, or abrasion may be spliced provided that only the casing is damaged and the core cords are not severed. Cut a length of type III nylon cord long enough to extend 3 inches on each side of damaged area, and dip ends. Sew cord to damaged suspension line as shown in figure 36. The number of splices must not exceed 8 per canopy or 1 for each suspension line. However, more than one damaged area may be included in one splice, provided that splicing material does not exceed 10 feet.

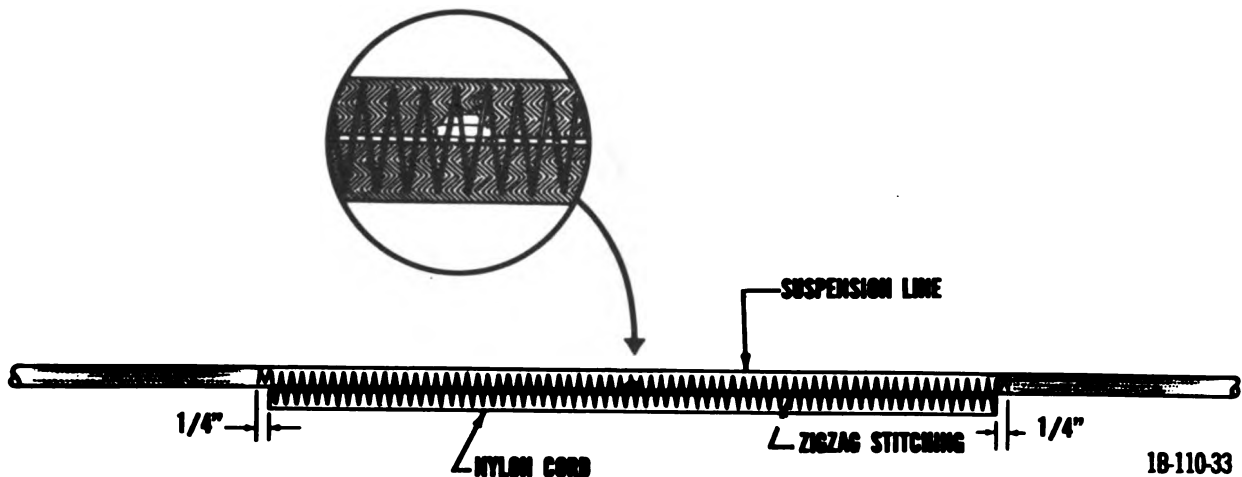


Figure 36. Suspension line splice.

21. Repairing Riser Assembly

The riser assembly consists of two risers, two snaps, and one riser spreader. The log record pocket and book are located near the snap end of the right riser. Repair riser assembly as follows:

a. Restitching Risers and Spreader. Restitch all loose or broken stitching on risers and spreader according to original construction. When restitching risers, use Singer Model 97-10 sewing machine or equivalent with ticket No. 5 nylon thread, and stitch 5 to 8 stitches per inch.

b. Replacing Handtacking and Restitching Log Record Pocket. Following original construction, handtack loose or broken tacking with No. 5 cotton thread, doubled and waxed (fig. 37). Restitch all loose or broken stitching with ticket No. E nylon thread, following original construction.

c. Replacing Log Record Pocket. Replace a lost or unserviceable log record pocket with a new pocket placed in exact location of old pocket. Handtack each corner of pocket to riser webbing (fig. 37), using three complete turns of ticket No. 5 cotton thread, doubled and waxed. Tie ends of tacking with surgeon's knot and locking knot.

Replacing Log Record Book. Replace a lost or unserviceable log record book (DA Form 10-42 (Army Parachute Log Record) according to instructions in AR 750-1670-2. Secure record book to pocket by passing a 13-inch length of ticket No. 5 cotton thread through upper edge of pocket and through hole in record book. Tie thread with square knot and locking knot. Insert book in pocket, fold pocket flap down, and secure tie cord to riser. Pass tie cord through tie cord loop, and make tie on underside of riser (insert, fig. 37).

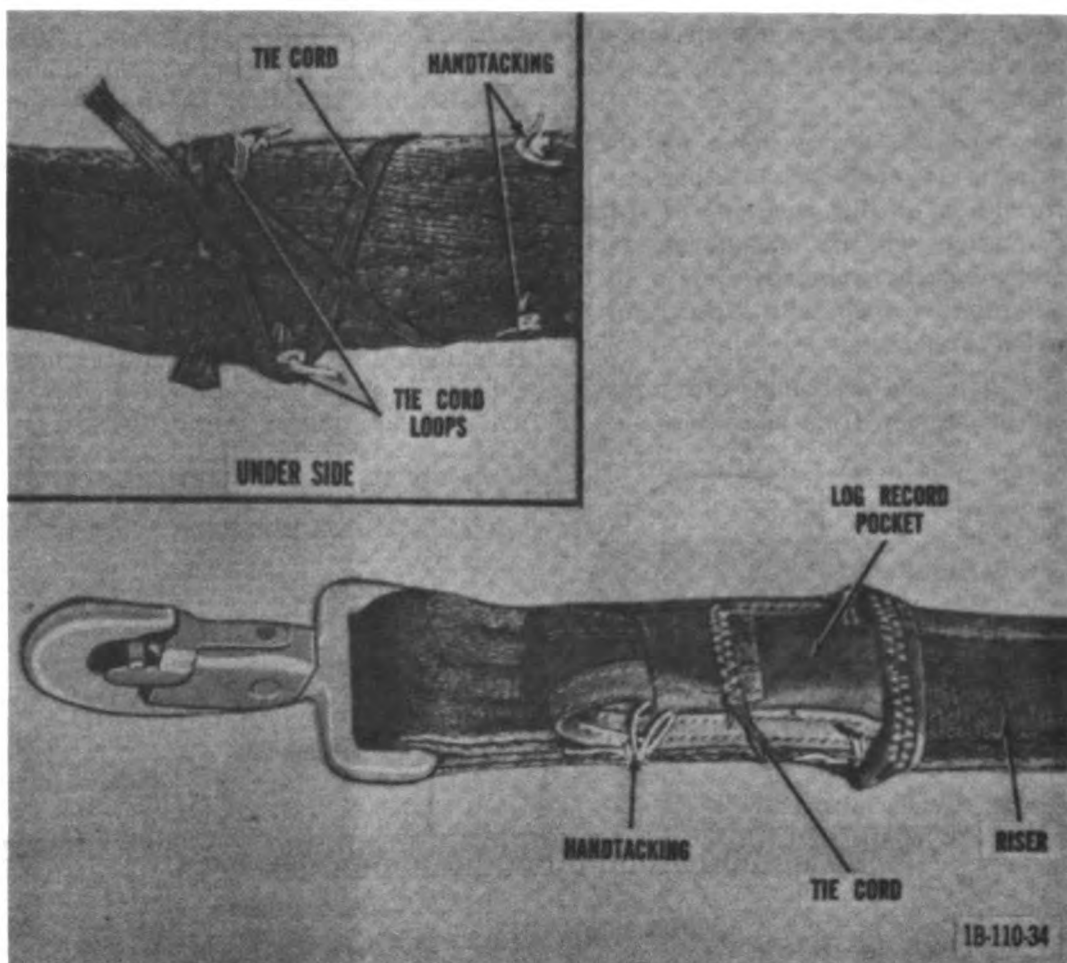


Figure 37. Log record pocket secured to riser.

22. Repairing Pack Assembly

The pack assembly is a bag-type pack with side panels, bottom panel, 4 closing flaps with 4 closing loop straps, and 4 tiedown tapes. The pack may be repaired by restitching, darning, or replacing tiedown tapes.

a. Restitching. Restitch all loose or broken stitching according to original construction. Restitch seam joining bottom and side panels, with Singer Model 7-33 sewing machine or equivalent. Use ticket No. 3 nylon thread, and stitch 5 to 8 stitches per inch.

b. Darning. Darn a hole in the pack that does not exceed 1 inch by following procedures in paragraph 20b.

c. Replacing Tiedown Tapes. Replace a lost or unserviceable tiedown tape by cutting a 42-inch length of type II cotton webbing, dipping ends of webbing, and tying webbing to pack tie-

down loop. Tie webbing to loop, passing half of the length of webbing through loop and securing it with a surgeon's knot and locking knot. The lengths of the two free ends of webbing should measure equal length (fig. 38).

23. Repairing Static Line Assembly

The static line, consisting of a 15-foot static line with a small clevis assembly, is constructed to form a clevis attaching loop at one end and a breakcord attaching loop at the opposite end. A bag opening loop is formed in the webbing at a point approximately 8 inches from the breakcord attaching loop. The static line may be repaired or replaced.

a. Repair. Repair a damaged static line by restitching or by replacing clevis assembly.

(1) *Restitching.* Restitch all loose or broken stitching according to original

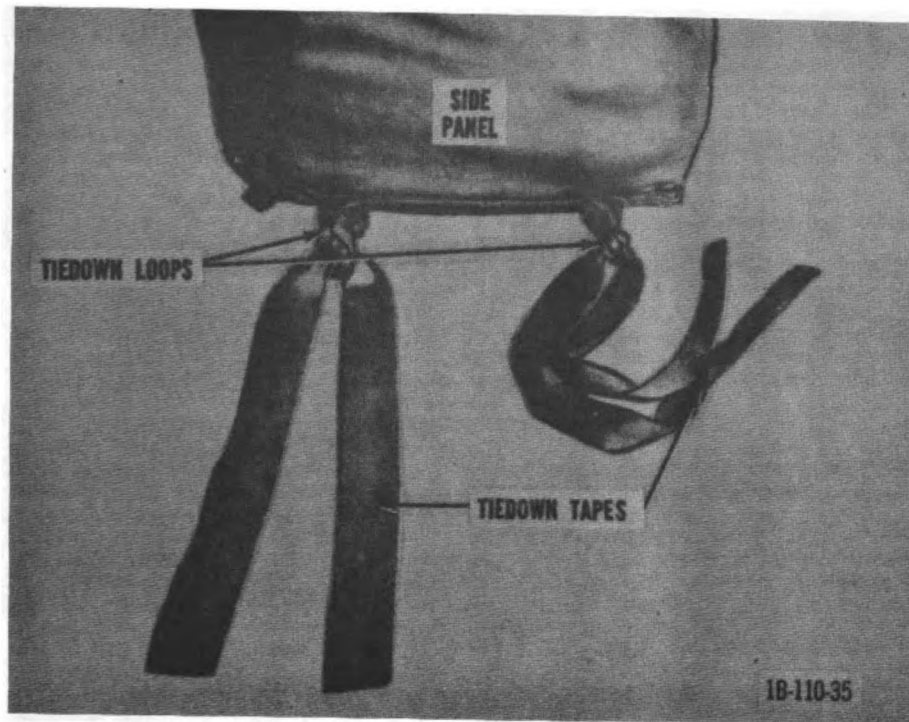


Figure 38. Pack tiedown tapes attached to tiedown loops.

construction. Use ticket No. 6 or ticket No. E nylon thread, depending upon original construction. Use Singer Model 97-10 sewing machine or equivalent when stitching with ticket No. 6 nylon thread, and make 5 to 7 stitches per inch. When stitching with ticket No. E nylon thread, use Singer Model 31-15 sewing machine or equivalent, and stitch 7 to 9 stitches per inch.

- (2) **Replacing clevis assembly.** Replace a lost or unserviceable clevis assembly with an item from stock. Secure clevis assembly to static line as shown in figure 39, using a 16-inch length of 75-pound braided linen cord (shock cord). Tie cord to clevis and to clevis attaching loop on static line, using square knots to make ties. Then tie one end of cord to clevis pin, and other end to cotter pin, using square knots for both ties. Tie overhand knots in ends of cord.

b. Replacement. Replace a static line that is damaged beyond repair with an item from stock.

24. Repairing Drogue

The drogue (fig. 40) consists of four vanes, constructed of cotton nylon duck cloth and nylon tape, and an attaching cord of type III nylon cord. The attaching cord provides for the attachment of the drogue to the static line.

a. Restitching. Restitch all loose or broken stitching according to original construction.

b. Darning. Darn a hole in drogue that does not exceed 1 inch by following procedures in paragraph 20b.

c. Replacing Attaching Cord. Replace a broken or frayed attaching cord as follows:

- (1) Remove damaged cord by cutting zig-zag stitching.
- (2) Cut a 17-inch length of type III nylon cord, and sear ends. Double the cord, and place it in exact location of removed cord.
- (3) Zigzag-stitch doubled cord to drogue according to original construction. Stitch cord one-fourth inch beyond binding tape, leaving a 5¼-inch long loop.

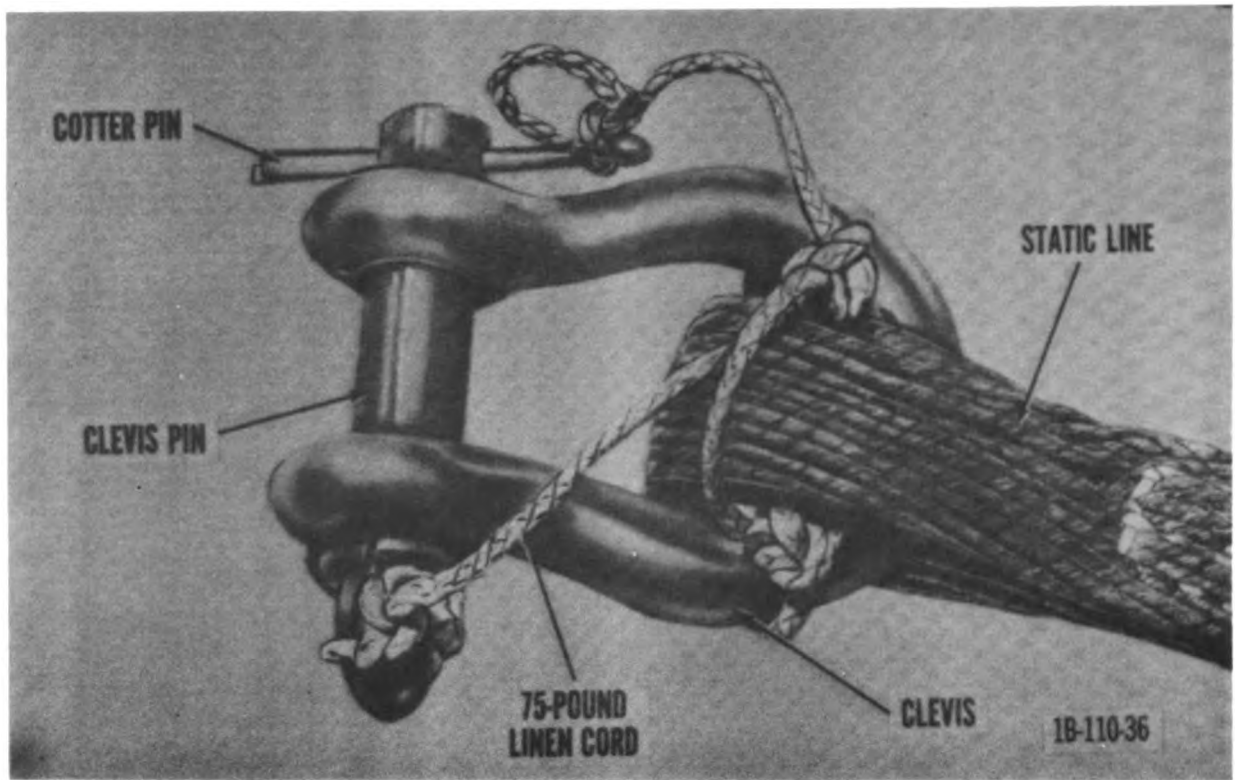


Figure 39. Clevis assembly secured to static line.

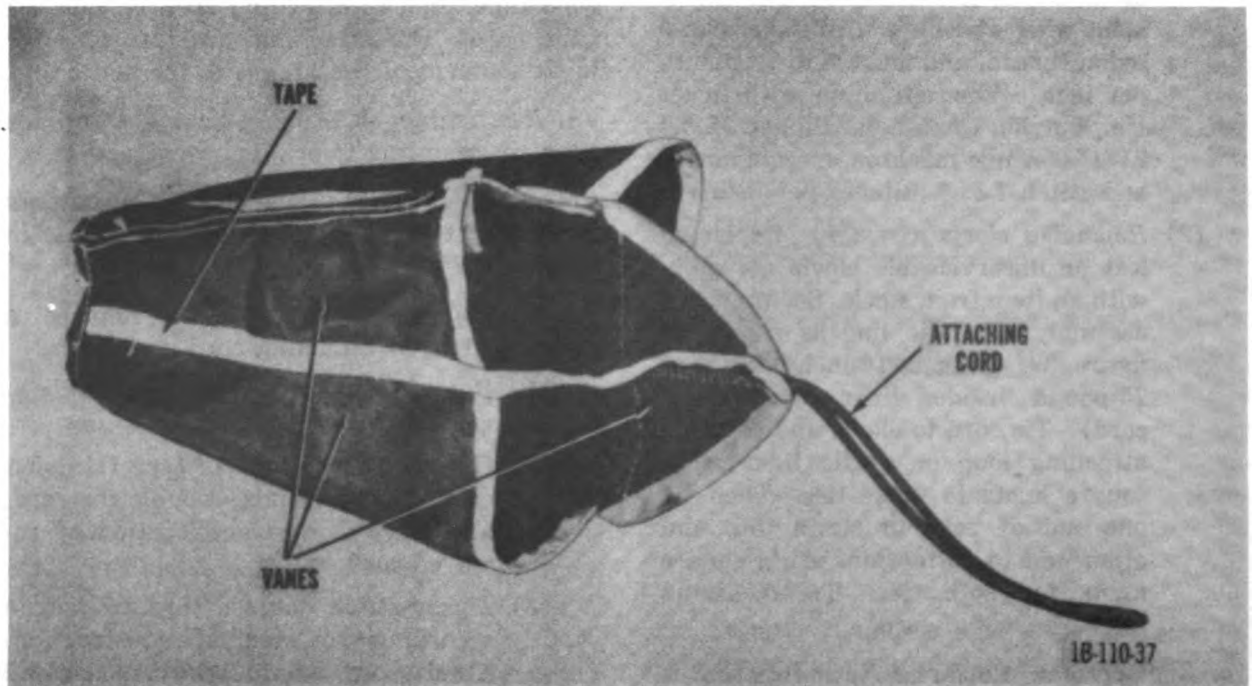


Figure 40. Drogue.

APPENDIX I

REFERENCES

1. Army Regulations

AR 310-1	General Policies.
AR 320-5	Dictionary of United States Army Terms.
AR 320-50	Authorized Abbreviations and Brevity Codes.
AR 700-38	Unsatisfactory Equipment Report.
AR 700-58	Report of Damaged or Improper Shipment.
AR 750-5	Organizational Policies and Responsibilities for Maintenance Operation.
AR 750-1670-2	Maintenance of Quartermaster Air Delivery Equipment.

2. DA Pamphlets

DA Pam 108-1	Index of Army Motion Pictures, Filmstrips, Slides, and Phono-Recordings.
DA Pam 310-1	Military Publications: Index of Administrative Publications.
DA Pam 310-2	Military Publications: Index of Blank Forms.
DA Pam 310-4	Index of Technical Manuals, Technical Bulletins, Supply Bulletins, Lubrication Orders, and Modification Work Orders.

3. Field Manuals

FM 21-5	Military Training.
FM 21-6	Techniques of Military Instruction.
FM 21-30	Military Symbols.

4. Technical Manuals

TM 10-263	Clothing and Textile Repair Sewing Machines.
TM 10-591	Sewing Machines for the Repair of Parachutes and Allied Equipment.

5. DA Supply Manuals

DA SM 3-1-6800	FSC Group 68, Chemicals and Chemical Products; Class 6810, Chemicals.
DA SM 10-1-1600	FSC Group 16, Aircraft Components and Accessories; Class 1670, Parachute and Aerial Pickup, Delivery, and Cargo Tie Down Equipment.
DA SM 10-1-4000	FSC Group 40, Rope, Cable, Chain, and Fittings; Class 4020, Fiber Rope, Cordage and Twine.
DA SM 10-1-5300	FSC Group 53, Hardware and Abrasives; Class 5315, Nails, Keys, and Pins.
DA SM 10-1-7900, 8000	FSC Group 79, Cleaning Equipment and Supplies; Class 7930, Cleaning and Polishing Compounds and Preparations.
DA SM 10-1-C2-2A	Clothing and Textile Materiel; FSC Class 8305, Textile Fabrics.
DA SM 10-1-C2-3A	Clothing and Textile Materiel; FSC Class 8310, Yarn and Thread; FSC Class 8315, Notions and Apparel Findings.
DA SM 10-1-C4-1	Petroleum, and Petroleum-Base Products and Related Materials; FSC Group 91, Fuels, Lubricants, Oils and Waxes.

APPENDIX II

MAINTENANCE ALLOCATION CHART

1. Purpose

The Maintenance Allocation Chart for the converted T-7A cargo parachute (FSN 1670-038-4413), with 28-foot diameter nylon canopy, lists all maintenance operations to be performed by the applicable echelons.

2. Definitions

The terms used in the Maintenance Allocation Chart are defined as follows:

a. Clean. To perform minor cleaning by shaking, brushing, or spot-cleaning, using an authorized dry-cleaning solvent or neutral synthetic detergent.

b. Darn. To repair small holes in fabric by use of proper darning machine or by hand method.

c. Inspect. To verify serviceability by a

thorough visual inspection of all components and parts.

d. Pack (For Drop). To prepare parachute assembly for use, i.e., fold canopy, stow suspension lines, stow canopy, attach and stow static line.

e. Patch. To repair a damaged fabric area that exceeds the limitations for darning.

f. Replace. To remove an unserviceable component or part and to install a like serviceable item.

g. Restitch. To sew directly over old stitching by use of proper sewing machine to replace broken or loose stitching.

h. Retack. To replace missing or defective hand stitching in accordance with existing directives.

Maintenance Allocation Chart

Group No.	Component and related operations	Echelon					Tools required	Remarks
		1	2	3	4	5		
	CANOPY ASSEMBLY:							(TM 10-1670-202-25) (par. reference)
	Clean		x					8a
	Darn		x					20b
	Inspect		x					6
	Patch		x					20c
	Restitch		x					20a
	Replace bridle loop.....		x					20e
	Splice suspension line.....		x					20f
	RISER ASSEMBLY:							
	Clean		x					8a
	Inspect		x					6
	Restitch and/or handtack.....		x					21a, b
	Replace Log Record Pocket		x					21c
	Replace Log Record Book (DA Form 10-42) ..		x					21d
	PACK ASSEMBLY:							
	Clean		x					8
	Darn		x					22a
	Inspect		x					6
	Restitch		x					22a
	Replace tiedown tape.....		x					22c
	STATIC LINE ASSEMBLY:							
	Clean		x					8
	Inspect		x					6
	Replace		x					23a (1)
	Restitch		x					23b
	Replace clevis assembly.....		x					23a (2)
	DROGUE:							
	Clean		x					8a
	Darn		x					24b
	Inspect		x					6
	Restitch		x					24a
	Replace attaching cord.....		x					24c
	CARGO PARACHUTE:							
	Packing (for drop).....		x					10-18

BY ORDER OF THE SECRETARY OF THE ARMY:

G. H. DECKER,
General, United States Army,
Chief of Staff.

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10-17 (3)
10-337 (3)
10-348 (3)
10-407 (3)
10-417 (3)
10-419 (3)
10-500 EA-EE (2)
10-521 (3)
33-105 (3)
33-106 (3)

NG: None.

USAR: Same as Active Army except allowance is one copy to each unit.
For explanation of abbreviations used, see AR 320-50.

XX 002 198 459



